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ABSTRACT

This document begins with a brief description of global change and of Nova Southeastern University's pioneering efforts in alternative distance education. A paper titled "Human Resources Development through Strategic Thinking" explores the following: shift from agricultural to industrial to communications systems; leadership for quality of life in an evolving global village; and the science and art of strategic planning. Extensive appendixes include the following: a glossary of 67 human resource development terms (Robert W. Hill); audit instruments used by colleges and universities; descriptions of voluntary national skill standards projects; accessing online resources; and transparency masters. Contains 28 references. (KC)

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NEW HABITS OF HEART AND MIND

"THIRD WAVE" TRANSFORMATIONAL LEADERS

ED 391 875

by

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NEW HABITS OF HEART AND MIND

ABSTRACT

...this is about our way of life. An historical analog would be the Industrial Revolution, but compressed into 15 years - not played out over a century. Hang on - this will quite a ride.

Joseph S. Kraemer. The Realities of Convergence. Arlington, VA: EDS Management Consulting Services, 1994.

* * * * * * * * * *

The 1950s and the 1960s were decades of rapid expansion in all phases of society and periods of rebuilding the economies devastated during World War II with the latest in know-how and technology. Europe and Pacific Rim countries were rebuilt with contemporary technology of the era, Germany with an engineering mindset and Japan with a mindset for importing of raw materials, efficient processing, and exporting goods. Global competitiveness and market share in the private sector led to several phases of modernization via waves of contemporary technology in the manufacturing sector of economies that ultimately led to fundamental restructuring. Restructuring ranged from carefully planned reengineering through ad hoc downsizing or rightsizing. The service sector of various economies is beginning to evolve through phases of modernizing and restructuring.

Nova Southeastern University (NSU) has been a pioneer in alternative distance education. NSU began its pioneering effort in alternative distance education in 1972 by grouping adult learners into clusters and having a national faculty fly to sites throughout the United States and elsewhere. NSU had the first graduate education programs in the U.S. to be delivered via computer and telephone into students' homes through bulletin boards and electronic mail in 1983. NSU adapted the electronic mail technology for concurrent real-time interaction of faculty and students in an electronic classroom (ecr) in 1985. This paper discusses the use of technology in doctoral programs, modernization as a prelude to proactive evolution from a university to a communiversity and then a collaborative globalversity.

* * * * * * * * * *

"By the year 2000, American colleges and universities will be lean and mean, service oriented and science minded, multicultural, and increasingly diverse -- if they intend to survive their fiscal agony."

John Elson. "Campus of the Future." Time, v. 139, n. 15 April 13, 1992.

NEW HABITS OF HEART AND MIND

PREFACE

We are privileged to live during an extraordinary time -- the turning of an era. Advanced nations have passed from an industrial era into an early technical phase based on modernization through technology. Several nations are going through fundamental restructuring because of technology and change in political systems. Contemporary technology has caused global competitiveness that is providing impetus for new forms of collaboration and fundamental realignment and restructuring of entire industries. Some nations are moving through the early technical era and entering an advanced technical era primarily through contemporary communication and information infrastructure. Many private sector establishments formed strategic alliances, modernized several times with contemporary technology, and reengineered through a variety of strategies and techniques.

Between now and the year 2000, policy makers throughout the world will face challenges and make decisions that will determine the quality of life for a majority of people in the first half of the 21st century. An ultimate purpose of education and training is human resources development -- to provide society with the critical mass of intellectual capital and competent workforces to function culturally, socially, economically, technologically, and politically in the world of which each is a part. To accomplish that ultimate purpose, leaders implement planning processes to (a) guide policy-making, (b) develop institutions, and (c) allocate resources.

People are surrounded with technologies, undreamed of a generation ago, which make it possible to transmit data, voice, and video instantaneously almost anywhere in the world and simultaneously in several different languages. Although these technologies are becoming commonplace in business and are sometimes available to children in homes, they remain largely unavailable in traditional education. Without access to the latest contemporary technology, a learner is receiving less than a complete education. Global competitiveness is providing impetus for collaboration and strategic alliances for the development of competencies and skills beyond those available in traditional education.

Numerous issues will be important in the years ahead. No issue will be more important, however, than "learning to learn" to apply the best research about the mind and systems to the science of co-creating more effective and efficient approaches to human resources development. Entirely new learning paradigms are emerging that can produce high quality knowledge workers for the 21st Century. Policy makers need resources to learn <u>New Habits of Heart and Mind</u>.

Nova Southeastern University (NSU) has been a pioneer in alternative distance education. NSU began its pioneering effort in alternative distance education in 1972 by grouping adult learners into clusters and having a national faculty fly to sites throughout the United States and elsewhere. NSU had the first graduate education programs in the U.S. to be delivered via computer and telephone into students' homes through bulletin boards and electronic mail in 1983. NSU adapted the electronic mail technology for concurrent real-time interaction of faculty and students in an electronic classroom (ecr) in 1985.

The Programs for Higher Education (PHE) doctor in education degree program has a philosophical framework which emphasizes the application of theory and research to solve programs in each student's work context. Each professional is encouraged to design a "Personal Program Plan" with a focus on problems to be solved through a variety of problem-solving methodologies within a three year time frame.

PHE consists of eight seminars, four practicums, a comprehensive examination and a major applied research project (MARP). The six core seminars are Curriculum and Program Planning, Governance and Management, Human Resources Development, Leadership, Research Methodology, and Societal Factors Affecting Education. Each student completes two seminars in one of the five specializations: Adult Education; Computing and Information Technology; Health Care Education; Higher Education; and Vocational, Technical, and Occupational Education (VTOE). Four practicums provide an opportunity to apply theory and research and sharpen skills in planning and conducting applied research using three different problem-solving methodologies of development, evaluation, and research. The MARP is a capstone learning experience that involves application of theory and research to a solution for a large scale problem.

Professionals enrolled in PHE provide education and training services in many contexts. The contexts include businesses of all types, health care systems, religious institutions, the full spectrum of middle and secondary schools and colleges, and government and the military.

Human Resources Development (HRD) had its origin as Personnel-Human Resources Development (P-HRD) in the VTOE specialization. P-HRD had a focus on preparing workforces of the future. PHE recognized the centrality of HRD and converted P-HRD into a core seminar beginning in 1990. The seminar consists of three components: analysis, vision, and action plan development. Each student is asked to audit HRD in her/his work context and select an HRD project for which s/he will create a vision and action plan. This document is intended to help students to attain competencies to become "Third Wave Transformational Leaders."

TABLE OF CONTENTS

	Page
PREFACE	2
HUMAN RESOURCES DEVELOPMENT THROUGH STRATEGIC THINKING	6
Introduction: The Macro ABCs	6
A. Agricultural Era	6
B. Business Industrial Era	6
C. Cognitive Synapses and Communication Technologies	7
Leadership for Quality of Life in an Evolving Global Village	8
From Nationalism to Early Collaboration	8
Collaboration for Rebuilding Economies and Promoting Peace	9
Collaboration for Improved Quality of Life for All People	11
Emerging Multi-national Learning Systems	12
Competition vs Collaboration via Global Systems	15
Strategic Planning Overview	16
Strategic Plannning: The Science and Art	18
Analysis of Internal and External Contexts	18
Visions and Alternative Scenarios	27
Action Plan Specification	34
Conclusions	45
BIBLIOGRAPHY	46
APPENDIXES	48
A. Glossary - Human Resources Development	
B. Audit Instruments	
C. Voluntary National Standards Projects	
D. Electronic Online and Other Resources	
E. Slides for New Habits for Heart and Mind	

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We are made wise not by the recollections of our past
but by the responsibility for our future.

George Benard Shaw

HUMAN RESOURCES DEVELOPMENT THROUGH STRATEGIC THINKING

THINKING

> Thinking within a fixed circle of ideas tends to restrict the questions to a limited field. And, if one's questions stay in a limited field, so also do the answers.
>
> Lyall Watson. Lifestyle. New York, NY: Simon and Schuster, 1979.

* * * * * * * * * *

Introduction: The Marco ABCs

James McGregor Burns (1978) drew the distinction between transactional managers and transformational leaders. Transactional managers handle many transactions efficiently. Transformational leaders seek clarity of attitudes, beliefs, and values to elevate levels of stimulation to create more effective and higher quality enterprises and services in the era and society of which they are a part.

We are privileged to live during an extraordinary time -- the turning of an era. Authors have described the macro transitions in numerous ways which will be discussed later in this document. Three eras are briefly described as (a) Agricultural Era, (b) Business Industrial Era, and (c) Cognitive Synapses and Communication Technologies, the ABCs of the macro transitions, as a prelude to a discussion of leadership and human resources development strategies and techniques to become proactive in reengineering education.

A. Agricultural Era

During the Agricultural Era, the United States had education for the elite who attended private schools and colleges for the privileged destined for the professions. Apprenticeship training was available for people who were destined to become craftsmen. The U.S. invented the "common" elementary school and spread it, first in urban areas and then in rural areas. Then, the U.S. invented secondary education and spread it in a similar manner.

B. Business Industrial Era

The transition from an agricultural era to the business and industrial era was based on low technology and know-how and took place over a long period of time. As the U.S. emerged during the business and industrial era, the vocational track was added in parallel to an academic track. A general track was added to accommodate students whose needs were not met in the academic and vocational tracks.

Major **expansion** occurred in the 1940s and 1950s in all sectors of the economy, particularly manufacturing and services. Rapid advances in science and technology yielded global competition and **modernization** at an accelerating rate. Establishments that survived, modernized with new technology in the 1960s and early 1970s. During the late 1970s and the early 1980s, it became apparent that modernization of industrial era establishments was necessary, but insufficient. The surviving manufacturing sector establishments modernized several times with contemporary technology and then began to **restructure**. More important, however, a few establishments began to recognize the centrality of **Human Resources Development** committed to **Total Quality** with world class **Benchmarking Standards.**

Although the manufacturing sector of the economy began to fundamentally restructure in the 1980s, the service sector of the economy is lagging far behind other sectors. Two extremely costly services are health and education. With regard to education, the U.S. ranks second in terms of expenditure for elementary and secondary education and ranks last or nearly last in math and all categories of science among industrialized nations. Education and training will be modernized and restructured. The key issues are (a) based on what beliefs, values, and research; (b) designed on what principles; and (c) restructured by whom (Groff, 1991).

C. Cognitive Synapses and Communication Technologies

Leaders have begun to realize the centrality of the brain and research in the cognitive sciences. Advances in research and development yielded communication and information technologies that have made it possible to transmit data, video, and voice instantaneously and simultaneously almost anywhere in the world. Human resource development systems will be created based on contemporary research in the **cognitive sciences** and the latest research in **communication and information technologies.**

Curriculum designers must produce High Performance Learners and Workers by (a) achieving greater efficiency from contemporary programs and (b) inventing solution based learning -- **applications and problem** oriented. Alternative education has been available since the beginning of time. There have always been two primary forms of education: (a) direct experience and (b) that which is transmitted from one member of a species to another via communications. Alternative education made advances via telecommunications, a trend that will accelerate with electronic books and electronic libraries, voice activated devices, networked multimedia, and videoconferencing. Higher education must play a lead role in rethinking, restructuring, and revitalizing **Human Resources Development** systems.

THE MACRO ABCs

PEOPLE	EDUCATION-TRAINING	OUTCOMES
A. AGRICULTURAL ERA		
ELITE OTHERS	SCHOOLS & COLLEGES APPRENTICESHIPS	"PROFESSIONS" CRAFTSMEN
B. BUSINESS INDUSTRIAL ERA		
PRIVILEGED	ACADEMIC VOCATIONAL GENERAL	QUALITY
DISADVANTAGED	DROP OUT	INEQUALITY
C. COGNITION & COMMUNICATIONS		

ANY LOCATION A LEARNING ENVIRONMENT
IN THE ADVANCED TECHNICAL ERA

RETHINKING, RESTRUCTURING, REVITALIZING

FROM POST - INDUSTRIAL ERA (PIE)

TO

EARLY TECHNICAL ERA (ETE)

TO

ADVANCED TECHNICAL ERA (ATE)

1970s 1980s 1990s 2000s 2010s

Leadership for Quality of Life in an Evolving Global Village

From Nationalism to Early Collaboration

The 1930s and 1940s were decades of emphasis on nationalism, particularly in Germany, Italy, and Japan. These nations structured their economies to promote their doctrine and will on their people and upon their neighbors. These governments began to indoctrinate their citizens and shape their economies to produce goods and mobilize people to advance a particular nationalistic perspective through armed control and power. Planned specific dogma yielded higher levels of nationalistic spirit and a larger share of the economy went to support a military strategy and wider and wider encroachment upon neighboring countries and ultimately escalated into World War II (WWII).

The United States made significant advances during the maturation of the industrial era and became the world's largest economy through efficient mass production strategies and tactics. The U.S. was isolated from Europe and the Pacific Rim in economy and geography. When the U.S. was drawn into WWII, it had to restructure an economy of goods for periods of peace to an infrastructure for goods to wage war successfully and it had to mobilize human resources for that effort. The federal government and the private sector made a major commitment to research and development (R & D) to produce the technology and know-how for refined systems for integrating various functions. The aerospace industry and the federal government collaborated on research and development to lead to air supremacy. The automobile industry and the federal government collaborated on motorized vehicles. The ship building industry and the federal government created an infrastructure to command the seas. And, agricultural R & D responded to the nutritional needs of the armed forces. The "systems approach" yielded planning know-how like Program Evaluation and Review Technique (PERT) and Planning, Programming, and Budgeting Systems (PPBS). Focus on behavioral objectives, critical incident technique, and task analysis began to emerge to train military personnel and defense industry workers.

Collaboration was necessary in WWII among the armed forces. Waging war successfully can only be accomplished through the integration of air, land, and sea military strategy and effective communication and information technology. Analysis of **strengths** and **weaknesses** of U.S. forces and analysis of **opportunities** and **threats** of opposing forces shaped a **strategic vision** and **action plan** to move from island to island in the Pacific. Allied collaboration led to **analysis, vision and action plan co-creation** which is more difficult among culturally and linguistically different nationalistic people using various standards of technology.

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Collaboration for Rebuilding Economies and Promoting Peace

Collaboration shifted from waging war to rebuilding economies and promoting peace. The United Nations charter signed in 1945 began a new phase of collaboration. The 1950s and 1960s were decades of rapid expansion in all phases of society and periods of rebuilding the economies devastated during World War II with the latest in know-how and technology. Europe and Pacific Rim countries were rebuilt with contemporary technology of the era.

The U.S. became pre-eminent during the industrial era immediately after World War II. The U.S. had the biggest market in the world and generated 75% of the World's Gross Product (WGP) which was almost eight times as large as the rest of the world. The U.S. was wealthier than any other nation. In the 1950s, the U.S. had a per capita income twice that of the next country and eight times that of Japan. The U.S. could afford to do large scale projects that other countries could not undertake. U.S. citizens could afford goods and services that people in other countries could not purchase.

Communism and democracy, in all its forms, emerged as two competing philosophies for organizing political systems. The rise of communism in mainland China resulted in the exodus of thousands of Chinese to the province of Taiwan. A classic example of bilateral collaboration that produced a win-win outcome was the Taiwan-U.S. partnership. The U.S. wanted to halt the spread of communism and support Taiwan's fledgling democracy. The U.S. provided Taiwan with military protection, economic aid, and technology to establish a military goods producing economy. The U.S. exported (a) technology to accelerate maturation of Taiwan through stages of industrialization and (b) educational assistance in vocational training to prepare the critical workforces. The success of this Sino-American partnership was expressed by Chang (1991) with statistics in per capita income.

Year	Income
1951	$ 100
1965	500
1990	8,000

Taiwanese now purchase many products made in the U.S.

A great deal of the U.S. pre-eminence was attributable to the investment in research and development, evolution of planning and management know-how and technology, and research universities that produced intellectual capital. During and immediately after WW II, the U.S. created the largest R & D infrastructure in the world. Investment in the scientific establishment by the federal government and the private sector was unparalleled in the world. Product development required new ways of planning, managing, and evaluating the continuum extending from nurturing of ideas

through production, distribution, and service of goods. Advances in science and technology increased in complexity.

Major **expansion** occurred in the 1950s and 1960s in all sectors of the economy, particularly in manufacturing and services. Rapid advances in science and technology yielded global competition and **modernization** at an accelerating rate. Establishments that survived, modernized several times with new technology in the 1970s and early 1980s.

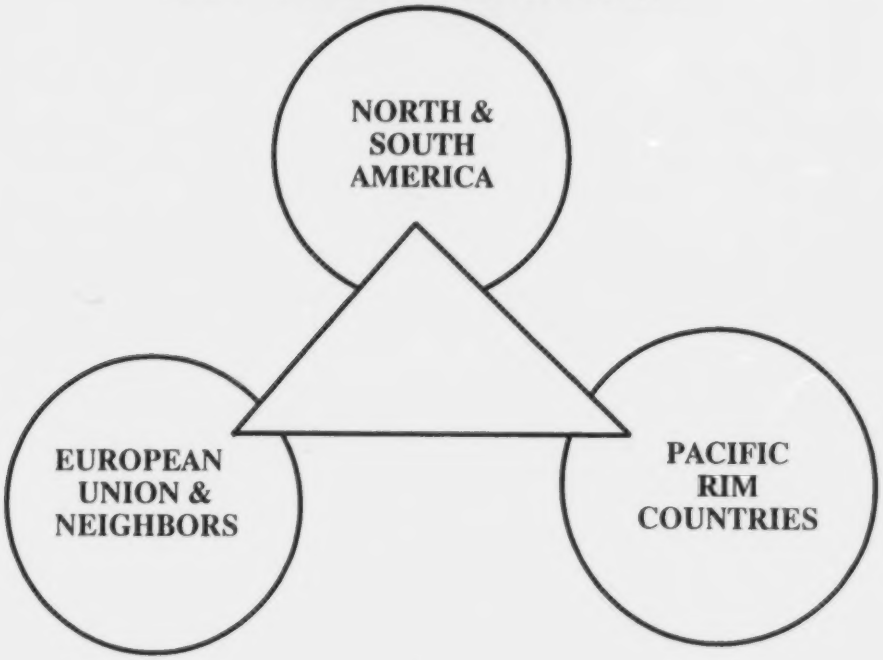
Pittsburgh was the steel capital of the world during the industrial era, primarily because of access to natural resources such as anthracite coal and the infrastructure to produce steel. The collapse of big steel is an example of the failure to invest in ***new technology*** as well as deal with ***bureaucracy*** and ***productivity*** through **human resources development**. Between 1974 and 1986, 337,552 jobs were lost and brought the death of Pittsburgh's Monongahela Valley as America's steel capital (Hoerr, 1986).

During the 1980s, it became apparent that modernization of industrial era establishments was necessary, but insufficient. The surviving manufacturing sector establishments modernized several times with contemporary technology and then began to **restructure**. More important, however, a few establishments began to recognize the centrality of **HUMAN RESOURCES DEVELOPMENT** (HRD) committed to ***Total Quality*** with world class **Benchmarking Standards.**

As the U.S. entered the 1990s, most of the above-mentioned and other advantages had disappeared. The U.S. had gone from 75% of the WGP in 1945 to less than 25% of the WGP in 1989. Manufacturing was particularly hard hit as can been seen in the decline in productions of phonographs, color televisions, computer numerically controlled machines, and aircraft. With regard to per capita purchasing power, the U.S. is now only the ninth wealthiest country having been surpassed by Luxembourg, Switzerland, Japan, Sweden, Denmark, Norway, Iceland, and Austria.

Three major areas are emerging in a new world economy. The European Union has 350 million people in 12 nations with a per capita income larger than that of the U.S.; The EU is moving toward integration. The North American Free Trade Agreement has a total population of 320 million people in Canada's 10 provinces, Mexico's 32 states, and the 50 U.S. states. The most dynamic region of the world is the Pacific Rim. The Republic of China (ROC) is currently the fastest growing economy. ROC has 22% of the world's population and has the fastest growing and largest middle class of people who want to buy products made by Western countries. Three-quarters of the economic opportunities are located outside the U.S. What are the implications for planning?

BETWEEN AND WITHIN



LEADERSHIP FOR A DEMOCRATIC SOCIETY

GLOBAL REGION	20TH CENTURY	21ST CENTURY
EUROPEAN UNION		
NORTH & SOUTH AMERICA		
PACIFIC RIM		

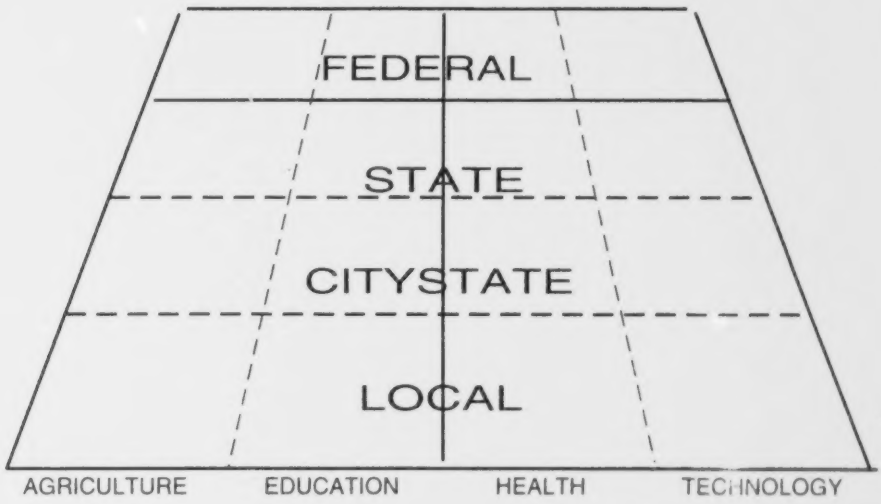
Collaboration for Improved Quality of Life for All People

The Organisation for Economic Co-operation and Development (OECD) has developed a uniquely internationally-comparable data base of indicators for sector analysis. The indicators for 13 of the 24 member nations cover five broad areas of manufacturing performance: business enterprise research and development; investment; international trade; employment; and production. Trends from an OECD study are
- The pre-eminence that the U.S. enjoyed across a wide variety of sectors has declined over the past two decades, but the U.S. still enjoys a considerable lead in many sectors, particularly the high technology industries.
- Where the U.S. has lost ground, it has usually been Japan that has gained. In many cases these gains have been broad-based, emanating from technology sectors.
- As Japan has gained, the European Community countries that were studied have seen the erosion of their position.

The globalization of the world economy is causing all nations to analyze human resources development policies and systems. Education, K through postgraduate, and training will be modernized and restructured through (a) internal initiatives and/or (b) forces external to the enterprise. The OECD Education Committee completed a three year analysis of "The Changing Role of Vocational and Technical Education and Training" (OECD). Industrialized nations will co-create and re-engineer education & training to be more competitive.

Advanced nations are transitioning through an early technical phase into an advanced technical era. The complexity and rate of change are accelerating, resulting in basic restructuring. The U. S. and other advanced nations made most of the major policy decisions in the the last era while they have maintained the government structure of the earlier industrial era. It is essential that leaders in the free world's largest democracies think strategically about the emerging 21st Century global village and collaborate in co-creating a preferred scenario. Then, leaders must determine strategic directions for the global economy as well as improved quality of life for all living species on earth and in the environment. No moral and sensible nation dare continue to ignore what is happening to children. The changing demographic, social, and economic conditions of the family are having a devastating impact on children and youth, particularly in rural and urban areas of the U.S. and other nations. A study by the Population Crisis Committee reported harsh suffering in 83 countries with 73% of the world's population in areas such as in Afghanistan, Somalia, Mozambique, Haiti, and Sudan where conditions are extreme. Western democracies will have a decreasing share of the world's population, dropping from 22% in 1950 to 15% in 1985, and to 9% in 2020. New visionary leadership will be required to improve the quality of life in a global village.

RESULTS ORIENTED GOVERNMENT POLICY & SERVICE DELIVERY



A NEW FEDERAL-STATE RELATIONSHIP: RESEARCH, DEVELOPMENT & SERVICE DELIVERY

	AGRICULTURE	EDUCATION	HEALTH	MILITARY
FEDERAL				
STATE				
CITYSTATE				
LOCAL				

Emerging Multi-national Learning Systems

Highly complex and sophisticated collaboration characterizes the new era of economic competitiveness. Strategic alliances between corporations are emerging, especially among multi-national industries attempting to go global to increase market share and penetrate new markets. Next generation training systems are being created from advances in communication and information technology. Client/server computing revolutionized the way business was conducted during the past decade and networked multimedia stands poised to make a similar impact (Hemrick, 1995).

An integrated economy in the United States with a free enterprise philosophy among the 50 states, a common monetary standard, and consistent industry standards for most "goods" and services, provided some of the impetus for European countries to begin to integrate nationalistic economies. The emergence of the European Union provided some impetus for the creation of the North American Free Trade Agreement and the hemispheric integration of North and South Americas.

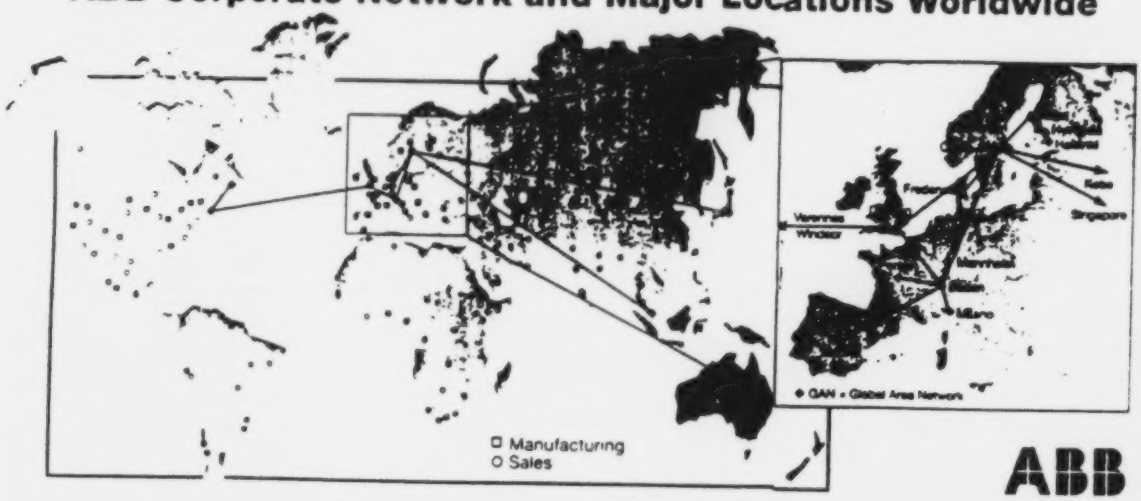
Global commerce is providing the impetus for the use of contemporary communication and information technologies in the delivery of education and training. Asea Brown Boveri (ABB) is the world's largest electrical engineering group and is renowned for its research, product development, low cost manufacturing, and the transfer of technology and know-how. ABB is a **highly decentralized** organization with business units distributed in **140 countries**, employing over **200,000 people**, with a net sales in excess of $30 billion U.S. (Telegate, 1993). ABB Corporate Network, ABB-CN, is used to communicate accurately and quickly through the concept of open communications which uses many types of transmittal media: data, text/fax, voice or image video. ABB-CN has been developed to provide various types of communications capabilities around the world for the exchange of drawings, proposals, and technical information.

In Finland, ABB operates via a nationwide conglomerate of independent companies, ABB Group Oy, divided into more than 40 operating locations dispersed around the country with the head offices in Helsinki (see Attachment). ABB Group Oy makes use of the latest communications technologies including Telecom Finland's full service concept known as Telegate. On May 3, 1993, Telecom Finland announced the world's first commercial asychronous transfer mode (ATM) between Helsinki with Tampere, 200 km to the north (Heinanen, 1993). ATM is a **fast packet switching technique** to transmit data efficiently in short, fixed size cells of knowledge at very high rates. Thus, Finland was the first country in the world to implement an ATM **distributed multimedia** communication network for the transmission of data, voice, and video simultaneously at speeds 1,000 times

ASEA BROWN BOVERI

140 COUNTRIES
200,000 PEOPLE
$30 BILLION U.S.

ABB Corporate Network and Major Locations Worldwide



ABB

greater than had been possible prior to that date. The pilot lasted one year, during which it evolved into full production of this strategically important new backbone technology.

Telecom Finland is helping in numerous projects using mobile technology (Mobile, 1993). In cooperation with the National Research Centre for Welfare and Health, four communities volunteered to apply mobile communications to areas of health and welfare beginning in 1987. Ulvila, in western Finland, wanted to focus on the day care of children to improve the cooperation between parents, kindergarten, and community personnel. The results have been impressive. Beyond the clear savings in expenditure, the results have yielded (a) changes from a hierarchial structure of work to horizontal interactive networking; (b) changes in self confidence, communication skills, motivation to improve skills, and new possibilities to work better; and (c) creative meetings between producers and providers of health and social services. The producers had not envisioned all the possible applications of the new mobile communication technology and the social workers had not imagined all the possible application of the technology -- solutions to problems. Consumers and providers who use contemporary communication and information technologies are more likely to continue to use such systems in whatever role they perform -- care giver, educator or health services provider. Dr. Judith Hatula (1995) analyzed research about what the telecom industry providers have done in HRD for the purpose of "Creation of a Human Resources Development Program to Affect Changes in Attitudes of Telecommunications Personnel to Improve Customer Service" at Telecom Finland.

Global learning communities have been evolving rapidly for the past several decades as can be seen in the increase in partnerships between multi-national private sector group alliances and in the distance education movement. Contemporary communication and information technologies hold the potential for (a) re-engineering traditional education and (b) creating entirely new info era learning communities.

The European Association of Distance Teaching Universities (EADTU) was established in 1987 by the principals of major distance teaching institutions to foster cooperation between organizations dedicated to higher education through distance teaching methodology (see Attachment). Activities and projects include (a) communications and information exchange, (b) collaboration in course and credit transfer and joint production, and (c) development of new media methods and technology.

> Collectively, members occupy a strategic position in Europe at the interface between the labour market and the educational system. Through coordinated cooperation EADTU, as a network, is instrumental in bridging the gap between the

Member institutions of EADTU
Sweden
Swedish Association for Distance Education Umeå, Est. 1984
Norwegian Association for Distance Education Oslo, Est. 1984
Finland
Norway
Finnish Association for Distance Education Espoo, Helsinki, Est. 1991
Republic of Ireland
National Distance Education Centre, Dublin, Est. 1982
Jysk Aabent Universitet, Aarhus, Est. 1982
Denmark
Open universiteit, Heerlen, Est. 1984
United Kingdom
Open University, Milton Keynes, Est. 1969
The Netherlands
Belgium
FernUniversität, Hagen, Est. 1974
Germany
Studiecentrum Open Hoger Onderwijs, Leuven, Est. 1987
Deutsches Institut für Fernstudien an der Universität Tübingen, Est. 1967
France
Fédération Interuniversitaire de l'Enseignement a Distance, Paris, Est. 1987
Universidade Aberta, Lisbon, Est. 1988
Spain
Italy
Portugal
Universidad Nacional de Educacion a Distancia, Madrid, Est. 1972
Consorzio per l'Universita a Distanza, Cosenza, Est. 1984

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demand for the supply of educational facilities, eg. transfer of courses from one country to another. In 1989 EADTU published a report 'Toward a European Open University.' On the basis of this report EADTU is now committed to collaborative activities to establish the infrastructure for the European Open University Network (EADTU, 1992).

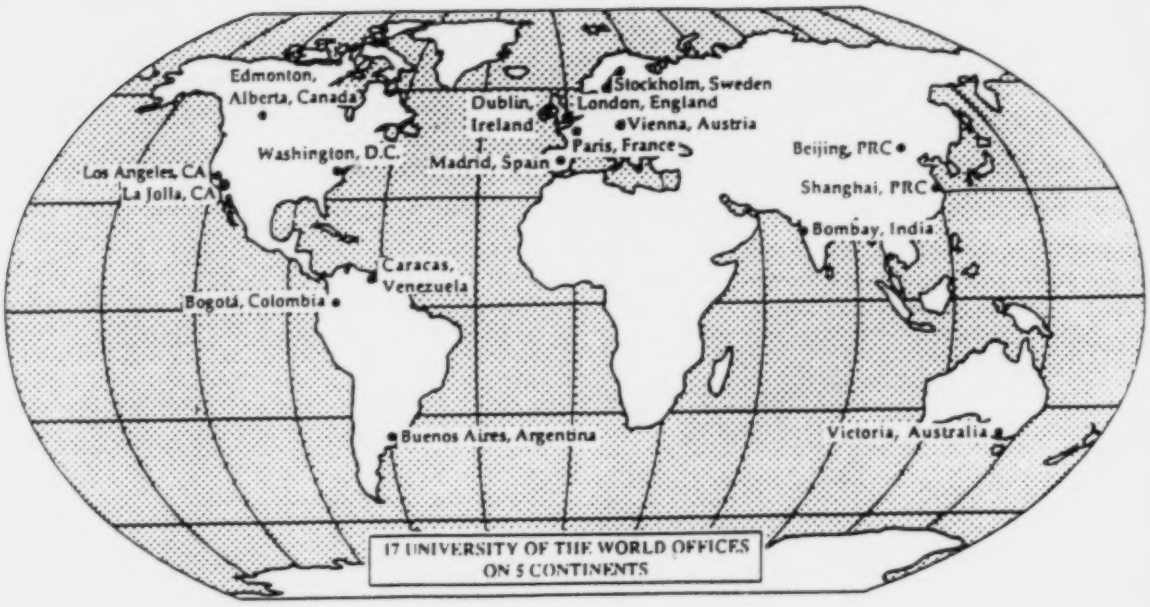
The infrastructure is yielding learning communities within and between the 12 European Countries (Bates, 1989).

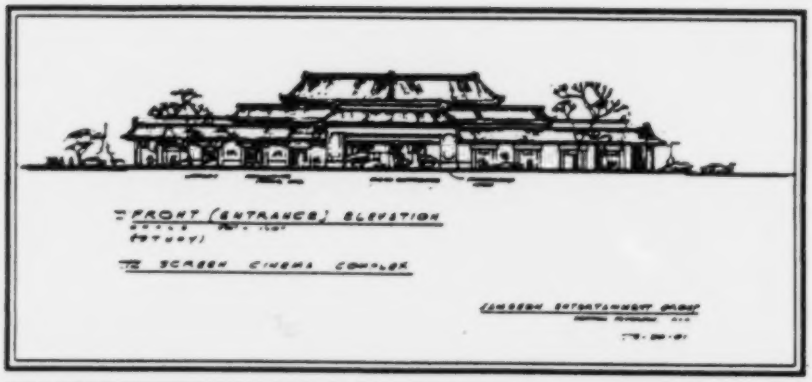
Pacific Rim countries are also implementing distance education. The Southeast Asian Ministers of Education Organization (SEAMEO) the project "A Scenario for Education in Southeast Asia in the Year 2015." Building Scenarios for Education in Southeast Asia: The SEAMEO INNOTECH Experience has identified distance education as a major thrust in the immediate future (Habana, 1993).

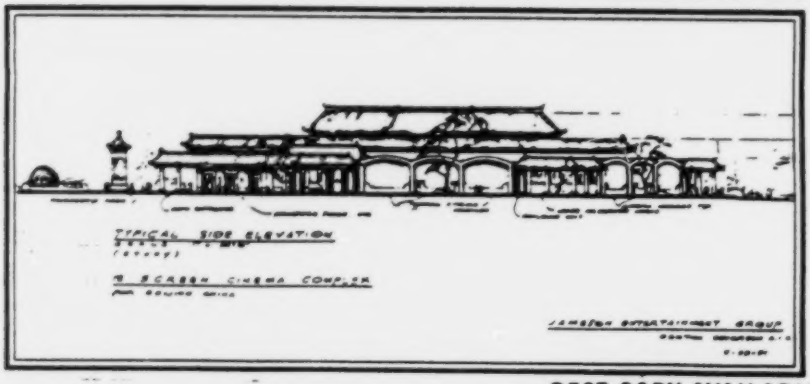
Niann Chung Tsai (1993) developed a strategic plan for alternative education at the World College of Journalism and Communication (WCOJC) in Taipei, Taiwan. The strategic plan identified the Telecommunications program as the first to be converted to a non-traditional format, a program that is both "ends" and "means" for communications infrastructure. Open University in Taiwan provides alternative education in that nation. WCOJC's strategic plan was approved by the Ministry of Education. WCOJC began implementation in 1994.

The University of the World, with a central office in La Jolla, CA, has been a major coordinator of distance education. UW announced in July 1993 the establishment of a worldwide Clearinghouse for distance education courses. Course information can be obtained by an e-mail request to the Internet address UNIVWORLD@UCSD.EDU (Newsletter, 1993). Some of the courses listed in the Clearinghouse are offered by the National Technological University, Fort Collins, CO.

In July 1992, UW and Jameson Entertainment Group (JEG) announced plans for 50 entertainment and educational complexes in the People's Republic of China (Newsletter, 1992). Four of these large entertainment and educational complexes are slated for Beijing, with UW providing local and distance education programming and other services in at least one of them. The ground floor will have twelve 185 seat theatres, in groups of three on each side of the building. The second floor is expected to be dedicated to educational needs, including classrooms, computer rooms, and a multimedia center (see Attachment). JEG plans to build entertainment/educational complexes on every continent of the world. UW could become the largest single provider of alternative distance education from outside the country in which services are provided.







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Competition vs Collaboration via Global Systems

A global village is emerging as the advanced nations of the world transition into a new era through the application of complex science and technology. During an earlier period of emergence, some of these nations applied the know-how and technology of an industrial era to imposing a doctrine and dogma upon neighboring countries which erupted into war but brought with it an early form of collaboration which led to alliances on a scale never before experienced to chart a course to preserve peace and stability in the world. Alliances continued to prevail for rebuilding economies and preserving peace. However, the alliances have been paralleled with a division between a relatively small number of "have" countries that have exploited many of the world's natural resources and a large number of "have not" countries with poor to harsh quality of life.

New alliances are emerging as a result of the application of contemporary communication and information technology. Intense competition is emerging with the maturation from international to global commerce. Multinational corporations are using contemporary communication and information technologies to manufacture goods and deliver services throughout most of the world. Many of these same corporations are using comparable technology to deliver training just-in-time.

OECD countries vary considerably in their approach to education and training. Democracies range from centralized to decentralized decision making, from policy creation to implementation. In Taiwan, for example, private school and college tuition is approved by the Ministry of Education. In the U.S., education and training are essentially a state function. Several states have multiple boards with varying degrees of authority, autonomy, and responsibility. Montgomery County, PA, has 22 school districts and Montgomery County, MD, is one school district. Regardless of structure, all OECD nations and many other industrialized countries are seeking new ways to reengineer human resources development policies and systems.

Human resources development is the critical variable. Modernization of HRD systems began to occur in the 1970s. In education, modernization often occurred in institutes and occupational technical programs in two-year colleges, then spread to vocational technical schools, and then colleges. The parallel research interests in a mind-machine interface is helping educators to change from a teacher-centered to a knowledge-based education and training paradigm. What beliefs and values about equality and quality will guide policy and planning processes? What are the implications for collaborative planning to co-create the global village?

Strategic Planning Overview

Planning systems matured from PERT and PPBS in the 1940s and 1950s to Management By Objectives (MBO) and Planning, Managing, and Evaluating (PME) systems in the 1960s. The private sector recognized limitations in MBO and began to develop strategic planning. The public sector has always trailed the private sector in adopting advances in planning systems. The private colleges, as a category of institution, were the first to use strategic planning followed by public universities and then two-year colleges. Within these broad categories, however, several institutions were in the lead in the adoption of strategic planning.

A great deal of research about strategic PME came from several projects. The Council of Independent Colleges (CIC, formerly the Council for the Advancement of Small Colleges). was successful in obtaining funds from Title III of the Higher Education Act to support Offices of Institutional Research at 15 small private colleges for three years in the early 1970s. The summative evaluation recommended that a series of planning manuals be developed to assist institutions use the emerging strategic planning technology. An exhaustive analysis of the research by approximately 100 professionals yielded twelve manuals that were pilot tested individually and then sets were used by small private colleges in the mid 1970s. The Academy for Education Development conducted a project that involved three categories of 60 colleges and universities in 1975-77. The University of Wisconsin System had one of the most advanced planning systems with categories for assumptions about future conditions and categories for goals in the 1970s.

In 1977-78, North Central Technical College, Mansfield, Ohio, began strategic planning. The strategic planning process began with a President's Cabinet retreat in which many "Plan to Plan" decisions were made based on research about this evolving know-how technology. First, contextual analysis would include an audit of the internal environment and an assessment of the external environment to provide historical data and projections into the future. Second, assumptions about future conditions would be specified from the contextual analysis and a common set of categories would be used by all budget units. Third, a limited number of strategic directions would be specified. Fourth, goals and objectives would be specified by all units using a common set of categories (a) mission attainment, (b) functional relationships, (c) qualitative improvements, (d) program development, (e) professional development, (f) public relations, and (g) funding sources. Fifth, budgeting and planning would be integrated. Sixth, a Comprehensive Planning and Budgeting Committee would review all programmatic activities and their relationship to budgeting. Seventh, everyone would be involved.

Several examples are drawn from NCTC because (a) many of the projects chosen by professionals in PHE were a central part of the institution's strategic planning process and (b) the topics are described in the literature and can be pursued through ERIC. Several examples are from Shelby State Community College because (a) many professionals in PHE work in multi-campus two-year colleges in urban settings and (b) the Middle College High School is an example of reengineering between layers of education. Several examples are from establishments represented by PHE students such as health care and health education settings. Several examples reflect the changing maturation of strategic planning through the 1980s as the U.S. experienced modernizations and entered the first wave of restructuring.

Also, a great deal was learned about developing human resource assets and what is needed to implement a successful strategic planning process during the 1980s. Brief statements about the science and art of strategic planning are presented at the beginning of the next section. These brief paragraphs about the science and art of strategic planning are followed by the analysis of internal and external contexts, both of which are mere introductions to the topics and intended to give a reader a sense of the central role people play in a strategic planning process. Then, additional comments are made about "The Art of Contextual Analysis for Visions Co-Creation."

Establishments which began strategic planning in the 1970s tended not to formalize planning to plan. By the early 1980s, several institutions created formal "Plan to Plan" handbooks. There are many decisions to be made about strategic planning. What should it entail? How and who will do it? Some of the decisions that must be made relate to (a) data elements that are to be collected and analyzed, (b) level of analysis and (c) access and distribution of the information. A "Plan to Plan" section follows "The Art of Contextual Analysis for Visions Co-Creation" so that some of these items could be considered during a plan to plan phase. Eight professionals created the Mercer County Community College Strategic Planning Model as a joint practicum in 1991 (Bolge, Barchi, Beneowitz, Coopersmith, Dowd, Kopcho, Meyer, and Mennuti). A "Plan to Plan" document may be a formal contract negotiated between stakeholder groups.

Reference will be made to documents and experiences that helped to develop "New Habits of Heart and Mind." For example, the April 1985 issue of Community Education Journal by the National Community Education Association contained a report on the "Building A Learning Society" conference. That same issue also announced a new publication entitled The Learning Community. The conference title and the publication title suggest a fresh perspective on collaboration.

Strategic Planning: The Science and Art

Planning systems evolved into Management By Objectives (MBO) and Planning, Managing, and Evaluating (PME) in the 1950s and 1960s. Major limitations of MBO and PME were (a) a mindset about closed systems and (b) endless specificity. The expansion era of the 1950s and 1960s assumed that an establishment was a closed system with minimal influence from variables external to it. Behavioral objectives shaped planning processes with excess detail to "means." Strategic planning began to evolve in the private sector in the 1960s.

Strategic planning is a "know-how" process technology for designing and shaping the future, not merely adjusting to circumstances. Strategic planning is intended to help create conceptual frameworks through the three step process of (a) **analysis**, (b) **visioning**, and (c) **action plan** development. Strategic planning is both a science and an art. The **science** of strategic planning consists of (a) contextual analyses of internal and external environments; (b) creation of visions and alternative scenarios; (c) specification of a preferred scenario with strategic directions and a multi-year action plan; and (d) the acquisition and allocation of resources based on the plan.

The **art** of strategic planning includes broad based empowerment of all stakeholders in transformational learning experiences intended to create a "community of learners" capable of **organizational and self renewal**. The process is based on beliefs, principles and values for improved quality of life. A high quality world class planning process has a focus on strategic thinking to achieve maximum synergism. The planning process required dedicated and sustained leadership focused on organizational development and human resources development with total quality commitment to engineer a next increment of growth (see Attachment).

Analysis of Internal and External Contexts

Audit of Internal Environment

The contextual analysis consist of an **internal audit** of mission, primary programs, support programs, organization structure, resource allocation, etc. The mission statement should be a clear, concise statement of the business of the establishment. Only a very few stakeholders have ever participated in creating or even reviewing a mission statement. A clear mission statement is necessary, but insufficient to meet today's needs. A vision statement is needed to communicate where the business is going.

Primary programs consist of curricula or tracks which lead to certificates, diplomas, degrees, or other formal recognition of completion of a planned program of study. American secondary schools tend to have academic, general

STRATEGIC THINKING

INTERNAL

AUDIT

VISIONS:
ALTERNATIVE
SCENARIOS

1. 21st CENTURY
2. 1990s - 2nd HALF

PREFERRED
SCENARIO

EXTERNAL

ASSESSMENT

OPERATIONAL PLAN

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5

ANNUAL IMPLEMENTATION PLAN

OPERATIONAL PLANNING

STRATEGIC THINKING: MAXIMUM SYNERGISM =

LEADERSHIP THROUGH

OD + HRD + TQC

Pre Program Audit	Year 1	Year 2	Year 3	Year 4	Year 5	Post Program Audit
Organizational Development						
Mission Primary Program Secondary Program Climate/Culture Institutional Effectiveness						
Human Resources Development						
Conceptual Interactive Technical						
Hoped for Outcomes	←				→	Actual Outcomes

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and vocational-technical tracks; colleges tend to have liberal arts, technical-occupational, continuing education, and community service and outreach programs and services. A curriculum consists of a **content format**, a **delivery system format**, and an **evaluation format**. Curricula often tend to be driven by a hard copy print-based textbook technology delivery system format or a "standardized test" evaluation format. Altering content in a hard copy traditional textbook or a standardized test, which is not standardized by any classical definition, takes a long time to change, and impacts on the interests of the publishing business.

Secondary programs consist of units needed to create, deliver, evaluate, and support all primary programs. Secondary programs include the library and media center, including all instructional technology, and student and administrative services, including all communication and information technology. Functional analysis is used to determine who does what, when, where, and how. Education and training occurs in a context which, when analyzed, provides an index of climate or culture. All activities should be evaluated to determine institutional effectiveness before and after an intervention strategy is applied.

A critical component of the internal audit relates to an analysis of communication and information technologies. An information-based economic and social system will require more access to contemporary communication and information technologies in primary programs and support programs, with particular emphasis on the library and media center with institutional research as a utility (Bolge, 1993). The above-mentioned dimensions or elements relate to what is discussed in the literature as organizational development.

The human resources development process of strategic planning should yield macro directions that the enterprise wants to pursue, such as computer based distance learning. Each strategic direction must be transformed into multi-year goals and objectives for each unit in an operational plan to which human activity and fiscal resources are linked in an operational plan. Human resources development has a focus on **conceptual, interpersonal, and technical competencies** and skills. Conceptual competencies relate to envisioning the larger macro picture at whatever level of responsibility be it (a) accessing the evolving global networks in the advanced technical era, (b) the changing education and training paradigm, or (c) a better more effective way for organizing a series of activities to achieve world class student learning outcomes from a lesson or seminar. Interpersonal competencies relate to more effective communications with culturally diverse people. Technical skills include the use of "language" to communicate as well as knowing how to run an "electronic classroom" or program. Appendix B contains information about audit instruments.

Assessment of the External Environment

The contextual analyses also consist of an **assessment of demographic, social, economic, technological, and governmental planning variables** that tend to be external to the establishment but which influence it in some way.

Two categories of economic variables are important: establishments, **workplaces**, and jobs, **workforces**. The Census Bureau collects information about employment outlook using ten major categories, four of which are labeled goods (agriculture, mining, construction, and manufacturing) and six of which are services (finance, transportation and utilities, wholesale and retail trade, services, and non-classified). Each of the categories of establishments has many different types of businesses (see Attachment).

Three categories in manufacturing that are essential to the viability of the U.S. are #8 printing and publishing, #9 electric and electronic, and #19 instruments. Graphic communications are essential to everyone because of the relationship to **literacy, productivity, and democracy**. Commercial printing was the fourth largest manufacturing industry in 1992. Desktop electronic publishing is revolutionizing the printing and publishing industry.

Three categories of services that are essential to the viability of the U.S. are #7 health services, #9 educational services, and #10 social services. People need (a) to be physically and psychologically healthy, (b) to be lifelong learners, and (c) to benefit from social services. Major issues consist of (a) access, (b) quality, and (c) cost. During periods of rapid economic and social restructuring, dislocations will occur which will impact on children and families and even health establishments.

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The Bureau of Labor Statistics analyzes number and type of jobs using the Standard Industrial Classification (SIC). BLS uses historical data with a series of variables to project changes in employment outlook. Although national trends are rather accurate, regional and state profiles are dependent on local variables such as economic restructuring.

ECONOMIC ESTABLISHMENTS

1. Agricultural services, forestry, fisheries
2. Mining
3. Contract construction
4. Manufacturing
5. Transportation & public utilities
6. Wholesale trade
7. Retail trade
8. Finance, insurance, real estate
9. Services
10. Non-classified

MANUFACTURING (#4) ESTABLISHMENTS

1. Food & Kindred Products
2. Tobacco
3. Textile Mill Products
4. Apparel & Other Textile Products
5. Lumber & Wood Products
6. Furniture & Fixtures
7. Paper & Allied Products
8. Printing & Publishing
9. Chemical & Allied Products
10. Petroleum & Coal Products
11. Rubber & Misc. Plastic Products
12. Leather & Leather Products
13. Stone, Clay & Glass Products
14. Primary Metal Industries
15. Fabricated Metal Products
16. Machinery, Except Electrical
17. Electric & Electronic Equipment
18. Transportation Equipment
19. Instruments & Related Products
20. Miscellaneous Manufacturing Industries
21. Administrative & Auxiliary

SERVICES (#9) ESTABLISHMENTS

1. Hotels & Lodging Places
2. Personnel Services
3. Business Services
4. Auto Repair Services
5. Miscellaneous Repair Services
6. Amusement & Recreational Services
7. Health Services
8. Legal Services
9. Educational Services
10. Social Services
11. Museums, Botanical, Zoological
12. Membership Organizations
13. Miscellaneous Services
14. Administrative & Auxiliary

STANDARD INDUSTRIAL CLASSIFICATIONS (SIC)

01-0	Agriculture
07	Agricultural services
08-09	Forestry and fishing
10-14	Mining
15-17	Construction
20-39	Manufacturing
40-49	Transportation, communications, & utilities
50-51	Wholesale trade
52-59	Retail trade
60-67	Finance, insurance, and real estate
70-89	Services
91-97	Public administration
99	Nonclassified

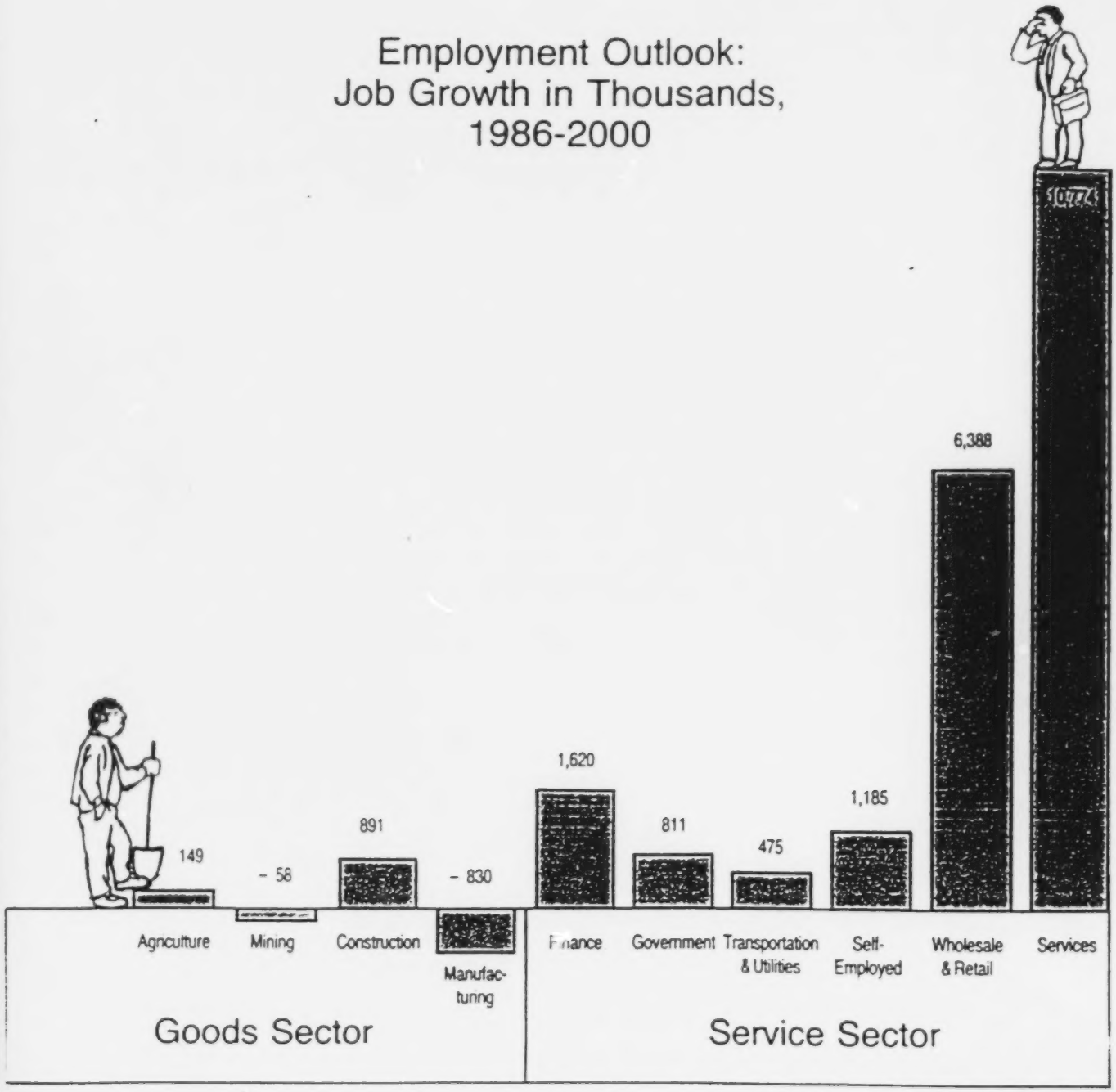
MANUFACTURING

20	Food & Kindred Products
21	Tobacco Manufacturing
22	Textile Mill Products
23	Apparel & Other Textile Products
24	Lumber & Wood Products
25	Furniture & Fixtures
26	Paper & Allied Products
27	Printing & Publishing
28	Chemicals & Allied Products
29	Petroleum & Coal
30	Rubber & Plastic
31	Leather & Leather Products
32	Stone, Clay, Glass, & Concrete Products
33	Primary Metal Industries
34	Fabricated Metal Products
35	Machinery, Except Electrical
36	Electrical & Electronic Equipment
37	Transportation Equipment
38	Instruments & Related Products
39	Miscellaneous Manufacturing Industries

SERVICES

70	Hotels, Rooming Houses, Camps, & Other Lodging Places
72	Personal Services
73	Business Services
75	Automotive Repair, Services, & Garages
76	Miscellaneous Repair Services
78	Motion Pictures
79	Amusement & Recreation Services, Except Motion Pictures
80	Health Services
81	Legal Services
82	Educational Services
821	Elementary & Secondary Schools
822	Colleges, Universities, Professional Schools, & Junior Colleges
83	Social Services (Census Only)
84	Noncommercial Museums, Art Galleries, Botanical & Zoological Gardens (Census Only)
86	Membership Organizations (The Census excludes 863, labor unions & similar organizations, 865, political organizations, & 866 religious organizations; the annual survey excludes SIC 86 entirely.)
89	Miscellaneous Services (Census Only)

Employment Outlook: Job Growth in Thousands, 1986-2000



Source: Bureau of Labor Statistics, 1987

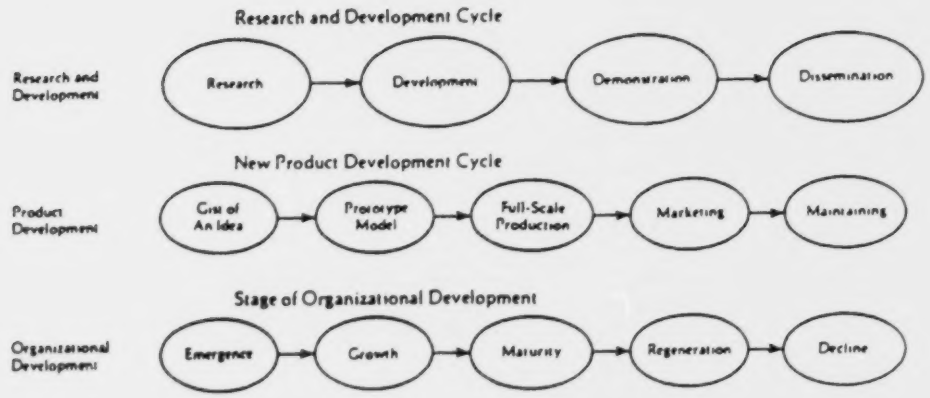
Technological variables are not classified in a manner like the economic variables. Some technologies apply to all establishments such as communication and information technology. The information explosion has gathered force over the past 40 years. Creating "intelligence" via computer and dissemination by communication and information technologies is the classic tool for creating wealth (Wriston, 1992). Technologies are fundamentally changing the way communications occurs.

It is important to monitor research and development that causes advances in science and technology and patents, a formal recognition of an invention that begins a chain of developments. Adoption of new technology requires "just-in-time" human resources development training which is uniquely customized for the workforces in specific workplaces. Several states are accelerating the rate of technology generation, adoption, and transfer to modernize existing establishments and to create entrepreneurial enterprises. Design For The Eighties in South Carolina, the Ohio Technology Transfer Organization, and the Ben Franklin Partnerships in Pennsylvania are examples of state economic intervention strategies (see Attachment). The National Technology Transfer Center (NTTC) at Wheeling Jesuit College is a link to the Federal Laboratory Consortium (FLC) and the National Technical Information Service (NTIS) of the U.S. Department of Commerce.

Advances in technology that are transferred into **workplaces** must become part of the student learning outcomes which are included in the curriculum to yield competent **workforces.** Consider the following technological advances:

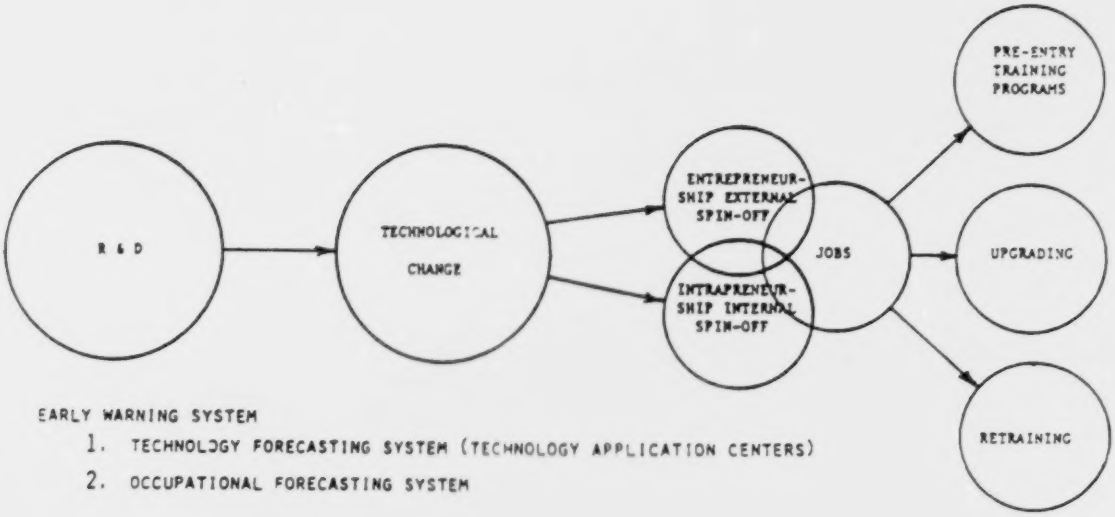
In 1955, it was hand set type and the platen press.
In 1981, it was the PC.
In 1985, it was desktop publishing.
In 1989, it was voice activated technology and desktop presentations with sophisticated graphics.
In 1993, it was voice activated typewriters and electronic books.
In 1994, it was be desktop videoconferencing which minimizes geographic, physical and temporal restrictions.
In 1995, it is asynchronous transfer mode (ATM) technology with continuous voice activated software on a PC using cellular-wireless communications technology to access **databases** through local area and wide area **networks.**
In 1996, it will be . . . .
In 1997, it will be . . . .
In 1998, it will be . . . .
In 1999, it will be . . . .
In 2000, it will be . . . .
And, by 2001 it will be . . . .

Developmental Sequences



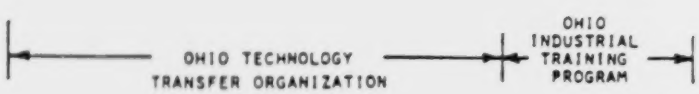
Warren H. Groff. "Strategic Planning of Technology Transfer." Journal of Studies in Technical Careers. Summer 1983, Vol. 5, No. 3. Pp. 260-274.

THE RELATIONSHIP BETWEEN R & D AND ECONOMIC DEVELOPMENT



EARLY WARNING SYSTEM

1. TECHNOLOGY FORECASTING SYSTEM (TECHNOLOGY APPLICATION CENTERS)
2. OCCUPATIONAL FORECASTING SYSTEM



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Other technological advances are equally important. Franklin Publishing, Inc., in Mt Holly, NJ, is the leading electronic book publisher. On January 3, 1993, Franklin publishing announced the world's first personal digital assistant (PDA) -- the powerful Digital Book System (DBS-1). Each Digital Book has a capacity to store the equivalent of 10 Bibles through Franklin's data compression technology. The 4.6 ounce DBS-1 measures 3" x 5" x 1/2" and will operate up to one year of normal use on lithium batteries. Dictionary Plus dictionary and thesaurus contains over 300,000 definitions and 500,000 synonyms as well as core meanings and antonyms. The Language Master makes language more accessible for people who are blind, visually impaired, learning diabled, or speech impaired. Franklin is the world's largest publisher of electronic books, having sold more than six million books including English and bilingual dictionaries, Bibles, encyclopedias, entertainment, and educational and tutorial publications. Franklin's books are sold in 67 countries. More than 50 new titles were available in 1993 on subjects such as nutrition, foreign languages, business, travel, nursing, education, health, investment, and cooking. To industry watchers, the DBS represents an entirely new chapter in the publishing field that could change all reference books of the future.

Voice processing industries are perfecting inexpensive speech recognition remote control applications. Verbex Voice Systems, Inc., Edison, NJ, announced in January 1993 that Hill-Rom Company has developed a system using Verbex technology for controlling hospital room functions by voice. ENHANCEMATE provides functional control over a wide range of hospital room utilities. The head and knee sections of the bed can be raised and lowered. The Dynamic Sleep Surface of Hill-Rom's bed can be adjusted to the patient's comfort level from soft to firm. Reading lights can be turned on and off. The TV can be turned on and off and channels can be changed. Phone calls can be placed via voice through the unit's built-in-speaker phone. Hill-Rom Company is a wholly-owned subsidiary of Hillenbrand Industries and a $1.2 billion diversified international conglomerate.

A critical component of the external audit relates to an analysis of the **communication and information technology infrastructure.** The critical significance of communication and information technologies can be seen in the increase of foreign exchange transactions from $10.3 billion a day in 1980 to $183.2 billion a day in 1989 (Wriston, 1992). Many businesses already use technologies that are several stages ahead of education and in some cases not even adequately introduced in the curriculum. Public libraries are an essential component of communication and information technology infrastructure; public libraries are a primary communications interface with the community.

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A second critical component of the external audit relates to an analysis of the extent to which establishments are engaged in **international commerce.** What goods and services are currently delivered to off-shore consumers? Where? How are the goods and services modified for culturally diverse consumers? What goods and services are delivered within NAFTA that could be modified and delivered off-shore?(see Attachment) U.S. citizens represent every culture in the world that can help establishments produce and deliver goods and services that are uniquely customized for other people. The Department of Commerce estimates that nearly 75% of world trade growth in the next 20 years will be in China, Mexico, Indonesia, Russia, and Czech Republic.

Governmental planning variables are critical to analyze even in periods of expansion of the economy. It is even more important to analyze federal and state legislation and proposed bills during periods of recession and restructuring such as the U.S. is experiencing today.

The contextual analysis of historical and contemporary information yields insights about what exists -- **THE REAL.** This first stage analysis is necessary, but insufficient. The information **must be extrapolated into the future.** Demographic, social, economic, and technological variables must be projected into the future as accurately as possible to provide the "intelligence" necessary to determine policy and guide decision making. Extrapolation of demographic and social data trend lines to 2050 and the analysis of impact on children and youth has helped shape the "Leave No Child Behind" agenda of the Children's Defense Fund. Children and youth of color will be hardest hit during restructuring. The future of the U.S. is dependent, to a great extent, on the preparation of children and youth of color at the postsecondary level.

Several educational institutions modernized in the late 1970s and early 1980s with contemporary communication and information technologies (Groff, 1981, and Leslie, 1981). Case study analyses of "Third Wave" institutions provide valuable insights about the process of **rethinking to modernize and revitalize** human resources development systems. These and other case studies also provide insights about the process of **rethinking for restructuring and revitalizing** that is necessary to create the next generation of more responsive info era learning communities (Groff, 1986b, and Leslie, 1986).

What are the implications for education and training? What are the implications for curriculum content and format? What are the implications for curriculum delivery systems? What are the implications for evaluating learning outcomes for students of all ages? What are the implications for rethinking for restructuring and revitalizing?

IMPORTANT ELEMENTS IN UNDERSTANDING OTHER COUNTRIES

LANGUAGE

- Spoken language
- Written language
- Official language
- Linguistic pluralism
- Language hierarchy
- International languages
- Mass media

POLITICS

- Nationalism
- Sovereignty
- Imperialism
- Power
- National interests
- Ideologies
- Political risk

VALUES AND ATTITUDES

Toward time

- achievement
- work
- wealth
- change
- scientific method
- risk taking

LAW

- Common law
- Code law
- Foreign law
- Home country law
- Anti-trust policy
- International law
- Regulation

EDUCATION

- Formal education
- Vocational training
- Primary education
- Secondary education
- Higher education
- Literary level
- Human resources Development

RELIGION

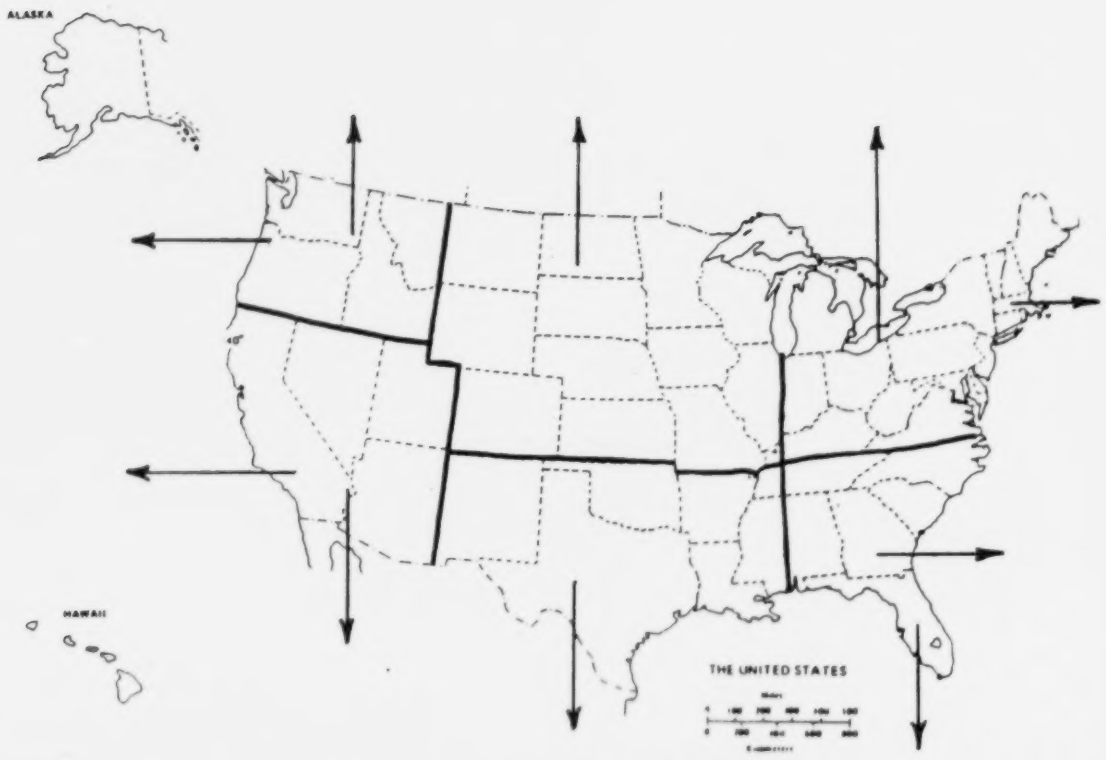
- Sacred Objects
- Philosophical system
- Beliefs and norms
- Prayer
- Taboos
- Holidays
- Rituals

TECHNOLOGY AND MATERIAL CULTURE

- Transportation
- Energy systems
- Tools and objects
- Communications
- Urbanization
- Science
- Invention

SOCIAL ORGANIZATION

- Kinship
- Social institutions
- Authority structures
- Interest groups
- Social mobility
- Sexual stratification
- Status systems



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Other Aspects of Contextual Analysis

Data collection and analysis

Some of the decisions that must be made relate to (a) data elements that are to be collected and analyzed, (b) level of analysis and (c) access and distribution of the information. A list of variables is attached.

Strengths, weaknesses, opportunities, threats (SWOTs)

One product of the contextual analysis is a list of strengths and weaknesses obtained from the internal audit and opportunities and threats from the external assessment. The intent is to build on strengths, minimize weaknesses, take advantage of opportunities, and reduce or eliminate threats. Criteria should be developed to prioritize lists.

Matching strengths to opportunities

A second step is the matching of opportunities with strengths. For example, the fastest growing market segment for two-year college prospective enrollments for the past few years has been 25 to 35 year old single female head of households. These prospective enrollees have unique needs.

Setting strategic directors

An institution must establish a limited number of strategic directions. Sometimes the strategic directions are set after the contextual analysis and before visions creation. Sometimes visions co-creation occurs first and is followed by setting a limited number of strategic directions.

Formatting unit goals and objectives

Strategic directions must be transformed into unit goals and objectives. A set of categories for goals and objectives is desirable that can be used all units.

Summary on Contextual Analysis

Many institutions analyze demographic and social variables such as age, sex, ethnic background, per capita income, wealth, etc. These data are essential in planning programs, particularly to increase understanding of cultural diversity and uniqueness of the area economy. One primary concern must be what is happening to children and families during this era of economic restructuring. The Children's Defense Fund is an excellent source for data of the conditions of children and youth (see Attachment).

Although many institutions have improved the analysis of the external context as it relates to demographic and social variables, education must do more to analyze economic and technological variables and interpret the implications for curriculum with emphasis on synchronization with reality of workforce and workplace needs.

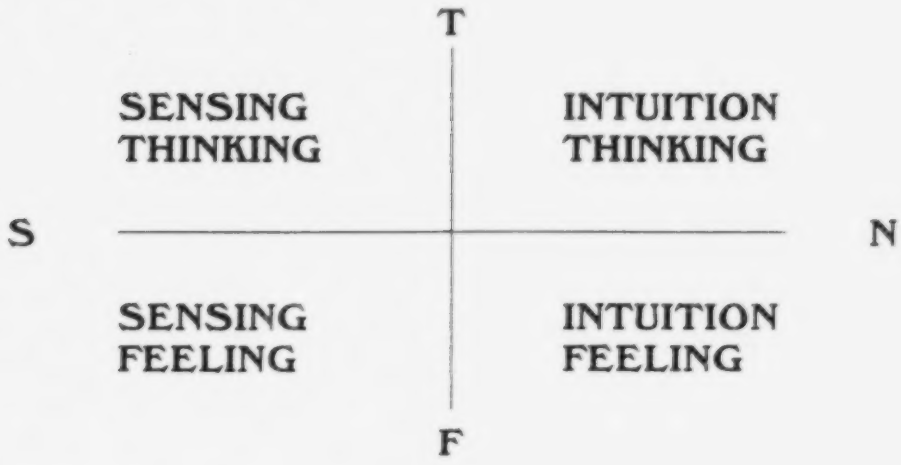
The Art of Contextual Analysis for Visions Co-Creation

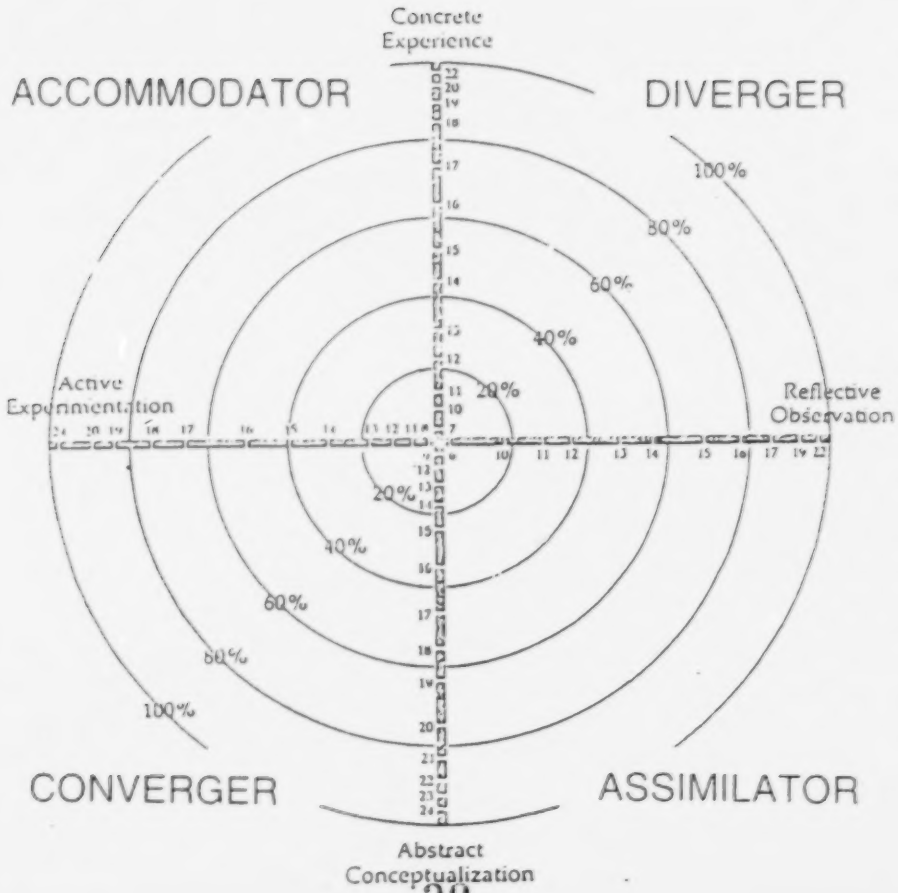
The University Council of Educational Administration (UCEA) recognized the need for a conceptual framework to help guide upgrading of graduate programs in administration. Understanding, Attitudes, Skills, and Symbols: Leadership in the Future (Cunningham and Payzant, 1983) synthesized basic research and identified program competencies for leaders. Also, significant research was conducted in the cognitive sciences on **cognitive style mapping** and **learning style.** This research was used in consultancies, seminars, and workshops on contextual analysis **to create and co-create a vision** with others and then to transform that vision into a multi-year action plan with organizational development (OD) and human resources development (HRD) components.

Leadership and human resources development begins with an understanding of "self." Infants begin life with some programming which is nurtured through culture and experience and leads to preferences and styles. The Kolb, Myers-Briggs Type Indicator, and other tests are useful to understand human variability relative to "inputting" ideas to begin to create conceptual frameworks or alternative scenarios. Humans and machines are similar in that both can input, process, and output information, like client/server roles. Leadership content involves an understanding of societal problems, leadership competencies and skills, the dynamics of change, strategic planning, organizational development, human resources development, powerful thinking, and professional development. Transformational thinking can be based on the research on reframing, mindfulness, holistic thinking, creativity, cybernetic thinking, systems thinking, chaos theory, and military strategy. Preference for input and processing is evident in the Myers Briggs or Kolb tests. What is your learning style and how do you prefer to intake data? How do you cognitively process data to create a conceptual framework? How do you peers intake and process?

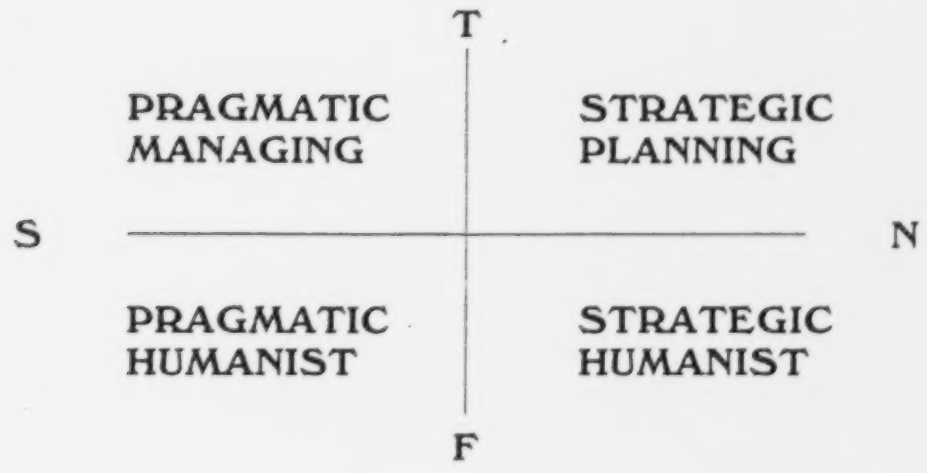
Visioning has both content and process. The content includes beliefs, values, mission, purpose, conceptual frameworks, research, and practice. The process includes creation in self, co-creation between people with similar predispositions, co-creation among people with dissimilar predispositions, etc. Visioning should yield a future "pull" conceptual framework to which purposeful human activity can be linked. A "full service" environment must first be envisioned and shared before it can be achieved. A curriculum to produce a "High Performance Learner and Knowledge Worker" with learning modules delivered through a computer-based distance education format with some, perhaps most, sessions online must first be envisioned before a multiyear action plan can be specified with OD and HRD components to make it become a reality. Gappert planning styles yields insights about visioning content and process.

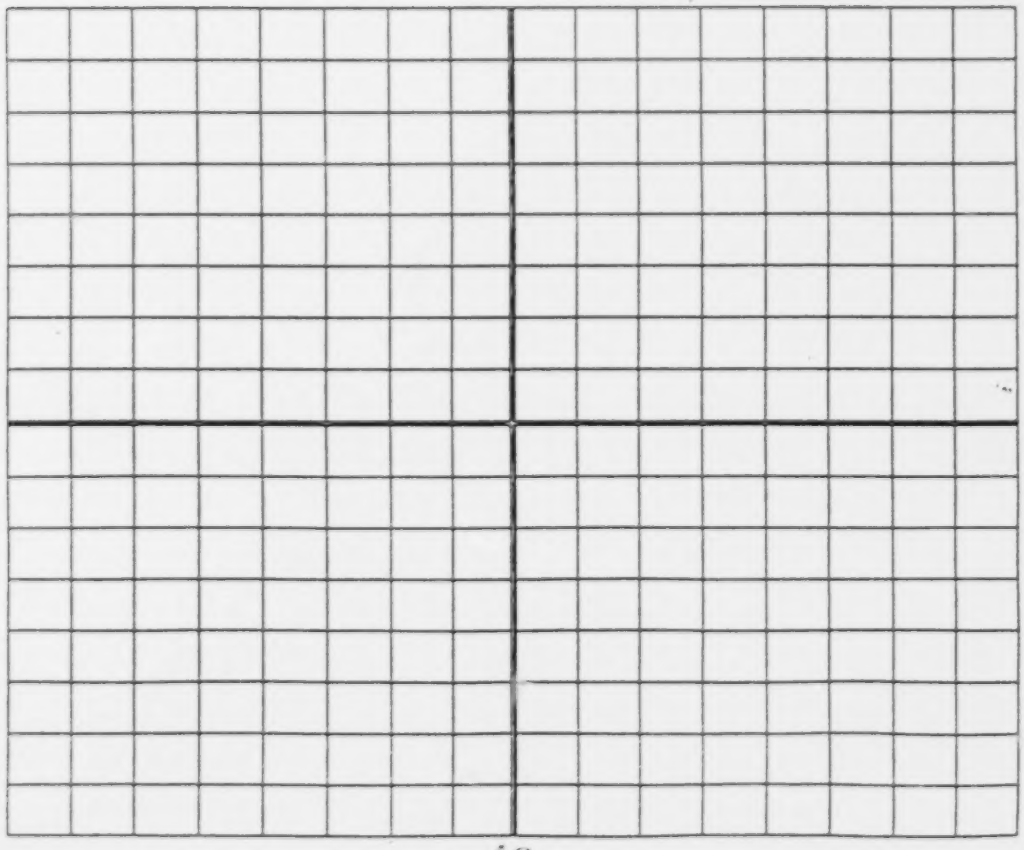
MYERS-BRIGGS TYPES





GAPPERT PLANNING STYLES





THE COMMUNICATION SYSTEM

	INPUTS	PROCESSES	OUTPUTS
HUMANS			
MACHINES			

"FUTURE PULL" PLANNING

	Creation	Co-Creation
ANALYSIS	External Environment (Past, Present, Future) Internal Environment (Past, Present, Future)	
VISION		
ACTION PLAN		

Plan to Plan

Establishments vary in their approach to planning for the future. In the 1960s and 1970s, it was common for the chief executive officer to plan in consultation with the governing board. Collaborative planning accompanied shared governance in the 1970s. Accreditation bodies, professional and regional, began to encourage and then require broad based participation in stratetic planning. The term "plan to plan" embraces both a document and a process proposal. The document would contain information about the goals and objectives, sometimes expressed in term of the products. The process could refer to the need to think strategically about the future, the plan of action, scope of work, the levels of analysis, and the time frame for the project.

Organizational structure and the selection, orientation and systematic nurturing of stakeholders is essential. The scope of work and the level of analysis will guide decisions about the organizational structure. A one year strategic planning process for restructuring nursing service at a 300 bed tertiary care hospital was completed through six internal and six external committees. A planning room with materials, research, and data books should be considered. Communication is essential, as are retreats and workshops, some of which could focus on technology. The format for products can be included in the Plan to Plan document.

What is to be accomplished could be specified before the selection and orientation of committee chairs. The details on what is to accomplished and how it should be done should be a decision of the strategic planning chair in consultation with committee chairs and members. Selection of people for various roles is extremely important. Strategic humanists may have a perspective of the world from different than the pragamtic humanists and may be very different from strategic planners and pragmatic managers.

The audit of the internal environment and assessment of the external environment can occur concurrently or can be phased in some sequence. Preliminary closure should occur for the contextual analysis with consensus on qualitative improvement. Then, visions and scenario development should occur using some categories such as (a) continuation of the contemporary traditional, (b) partial technological, and (c) technology intensive. A preferred scenario must then be specified which is used to create a multi-year action plan (see Attachment). Nine allied health programs at a medical college were involved in strategic planning in 1992. After concensus was achieved on strengths and opportunities, the 72 participants were grouped by planning preference to specify goals and objectives under four major categories (see Attachment).

BUILDING COMMUNITIES AND NEIGHBORHOODS

PRELIMINARY	EARLY FALL	LATE FALL	EARLY WINTER	LATE WINTER	SPRING
Plan to Think Strategically	Internal Audit	External Assessment	Alternative Scenarios	Preferred Scenario	Strategic Plan
Plan of Action					
Scope of Work		Demographic		Contemporary	1. Health
Levels of Analysis®		Social		Traditional	
Org. Structure		Economic			2. Learning
Planning Room					
Materials		Establishments & Jobs (Workforce)			
Research					3. Culture
Data Books				Partial	
Communications		Technology		Technological	
Retreats					4. Work
Workshops - Technology		Global Change			
Format of Products				Technology	5. Arts
Focus on Creativity		Impact		Intensive	

STRATEGIC PLAN

FOR IMPROVED QUALITY OF LIFE

	YEAR 1 RAISE AWARENESS	YEAR 2 AROUSE INTEREST	YEAR 3 DEVELOP UNDERSTANDING	YEAR 4 INCREASE COMMITMENT	YEAR 5 TOTAL DEDICATION
HEALTH					
LEARNING					
CULTURAL					
WORK					
ARTS					

RED	GREEN
PRAGMATIC	STRATEGIC
MANAGERS	PLANNERS
FR	QI

YELLOW	BLUE
PRAGMATIC	STRATEGIC
HUMANISTS	HUMANISTS
HRD	MA

RETHINKING, RESTRUCTURING, & REVITALIZING

	YEAR 1 UNDERSTANDING	YEAR 2 COMMITMENT	YEAR 3 DEDICATION
MISSION ATTAINMENT			
FUNCTIONAL RELATIONSHIPS			
QUALITATIVE IMPROVEMENTS			
HUMAN RESOURCES DEVELOPMENT			

Visions and Alternative Scenarios

In 1977-78, North Central Technical College, Mansfield, Ohio, began a strategic planning process which included a detailed analysis of contextual variables which were extrapolated through the 1980s for business, engineering, health, and public service programs. The process included specification of assumptions in the fall, setting of objectives for seven goal categories in early winter, and relating operating dollars to objectives in late winter and early spring. Imagine the human resources development of faculty, full- and part-time, and program advisory committee members discussing the "Waning of 'Industrial Society' - Rise of Technical Information Society'" (see Attachment). What assumptions would you have made in 1977-78 about the 1980s? What conceptual framework of the future would you have co-created about education and for your areas of responsibility? What long term goals and short term objectives would you have set for mission attainment, functional relationships, qualitative improvements, program development, professional development, and fiscal resources?

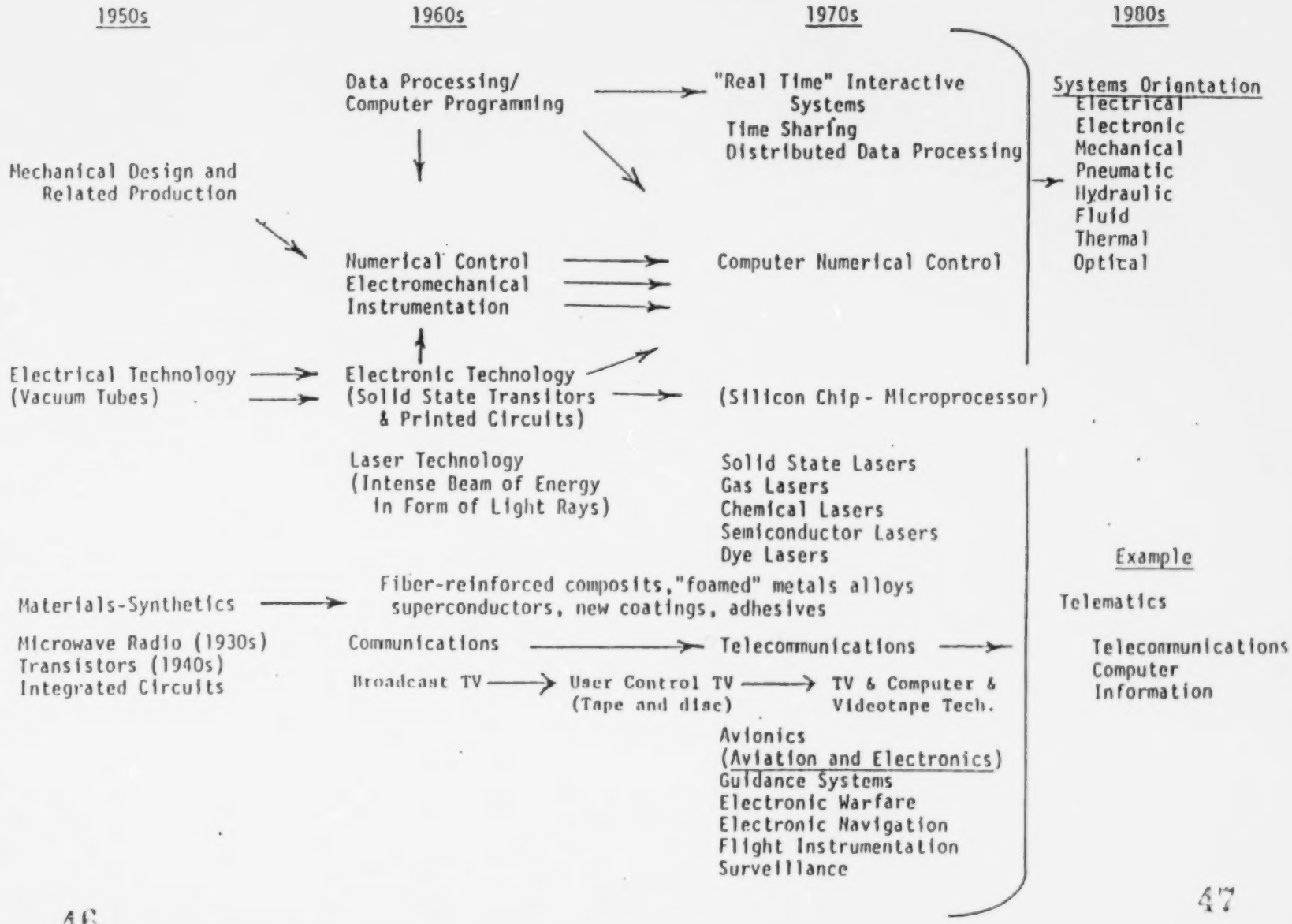
Following the first cycle discussions, NCTC specified strategic directions for three major categories:

1. Information Processing
   - A. Computer Literacy
   - B. The Office of the Future or the Paperless Office
2. Electronic Delivery of Educational Programs and Services
   - A. Interactive Diagnostic and Instructional Systems
   - B. Tecommunications and Teleconferencing Systems
3. High Technology
   - A. Advanced Machine Tool Design
   - B. Microelectronics
   - C. Robotics
   - D. Lightwave Circuit Technology

During the second year, greater specificity was added to the "Decade of Rapid Technological Change" (see Attachment). NCTC co-created a conceptual framework which positioned data and information processing at the core of the business of primary and support programs (see Attachment).

"The Office of the Future" focused on workplaces of the future. Program advisory committees assisted full-time and part-time faculty to anticipate the evolution of technology, the rate of adoption of technology and the implications for programs. For example, what technologies are being considered for use by businesses in the college's service area and what are the competencies and skills that graduates should have for entry into the workforce? What technologies are being used in engineering technologies from computer aided designing (CAD) through computer integrated manufacturing (CIM)? What technologies are being considered for a continuum of care extending from health promotion through tertiary care? Identification of technologies and

WANING OF "INDUSTRIAL SOCIETY" - RISE OF "TECHNICAL, INFORMATION SOCIETY"



THE DECADES OF RAPID TECHNOLOGICAL CHANGE

The Electronic Society

	1980	81	82	83	84	85	86	87	88	89	1990	2000
Business Technologies Data Processing	Word processing Microprocessing Computer graphics National information banks			Fiber optics		Computer and artificial intelligence Automatic production lines		Electronic mail Automatic dictating of voice to hard copy			Voice synthesizers Interactive computers	
Engineering Technologies Transportation Energy	Two-way television Smaller, more efficient automobiles Energy conservation Synthetic fuel Toxic substance control Technological advances in monitoring					Shift in energy patterns-solar, nuclear fusion, biomass, Lasers		hydrogen, microwaves, acquifers 27.5 m.p.g.		Rebuilding of mass transit-bus, rail Increase in industrial robots Conversion to metric system		
Health Technologies	Test tube babies Relationship between diet and disease Chemotherapy Cure for drug addiction Alcohol related disorders Major focus of research in biomedical and behavioral sciences			Artificial organs		Long-range effect of manmade pollutants on health		Cardiovascular disease-lab basic science & health science Biopsychological manipulation		Health promotion	Prolonged life Cure for cancer	
Public Service Technologies	Government policy impact analysis Advances in crime lab science Programming for volunteers											
Revolution in Education	Access Discs Video tapes Advances in CAI-CMI	Opportunities for handicapped Courses by newspaper Facilitators of learning Consortia			Cable TV	Cognitive style mapping Microwave Communications satellites		Interactive TV and computer Education for each		Memory drugs	Altered states of consciousness Chemistry of learning	
Accountability	Guidelines National goals Increased regulatory action	Government standards		Deregulation		Safety limits		Safety and health inspections				
Finite Resources	Major changes based largely on ideas and processes launched during the 1970s, some poised now for an explosive burst of growth											
Change in Workplace Technological Attitudes/Values	Increasing prounced shift in American values - dignity and self-worth Increased use of robots Flex schedules Meaningfulness of work Changing structures Synchronizing training schedules with work schedules				Job sharing	Job enrichment Human resource development (HRD)		Humanistic environment				

49

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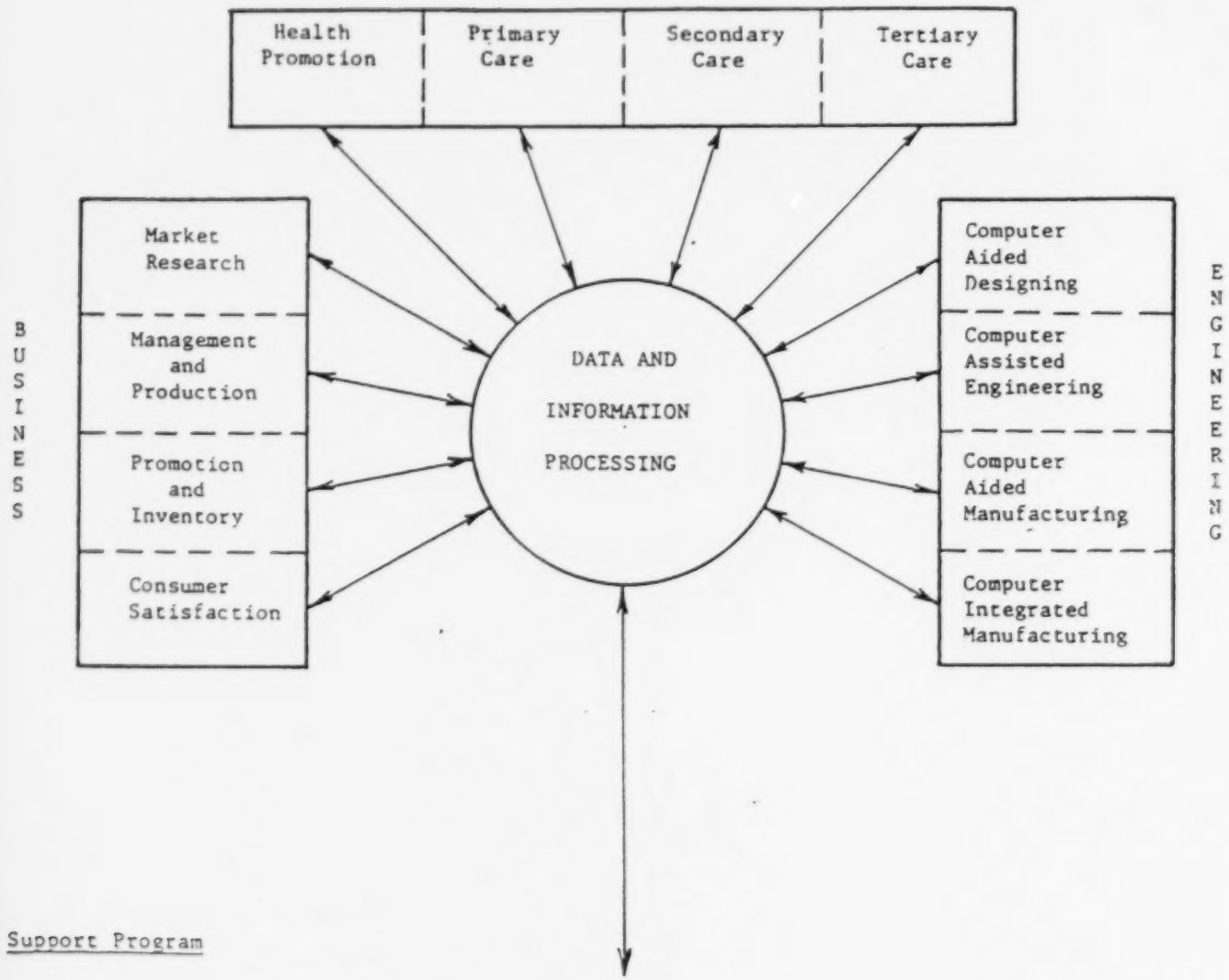
DATA AND INFORMATION PROCESSING AS THE CORE
OF THE HIGH TECHNOLOGY INFORMATION SOCIETY

Primary Programs

HEALTH CARE



Support Program

Strategic Planning, Management, and Evaluation

Market Analysis					Outcomes and Impact Analysis

the specification of competencies and skills of graduates provides a framework for many other decisions for qualitative improvements.

After NCTC specified strategic directions in 1977-78, it began to add specificity to each of the major thrusts. For example, competencies in computer literacy were specified which ranged from every consumer and provider being able to read a printout to high level technical skills such as application, language proficiency, and systems analysis and design. Language proficiency varied in data processing programs and various other business programs. Specific skills were quite different for language proficiency in drafting, mechanical, and electronic engineering programs. These competencies and skills were stated as student learning outcomes (see Attachment).

A similar approach was taken for support programs ranging from market analysis through outcomes and impact analysis. NCTC created a management information system (MIS) which indicated (a) retention by course by term by program and (b) participation rates in higher education by districts (with NCTC's market share for four years after graduation from high school) in the service area and contiguous municipalities. The data yielded insights for marketing and retention strategies and tactics. Programs to orient school district superintendents and professionals were conducted as a prelude to career information workshops for school counselors and faculty.

Strategic directions were transformed into multi-year goals and annual objectives which varied from program to program. Many of the goals and objectives applied to the curriculum, instructional support, and administrative support areas. Faculty included the important ideas, such as computer literacy, in the curriculum as student learning outcomes. These competencies and skills became the core for organizing meaningful and purposeful human activity and fiscal resource allocation. Faculty and teachers from area school districts collaborated on 2+2 agreements based on competency models of other institutions. Within a few years a 2+2+2 articulation program existed between area high schools, NCTC, and engineer at the University of Toledo.

In the early 1980s, it was apparent that an electronic health care communications network would soon be possible. Patients would be able to input vital signs from their home, community-based health care unit, or physician's office which would be transmitted to a hospital for processing by a laboratory or pharmacy. Upon discharge, the information flow would be reversed. The conceptual framework led to the funding of an Academic Challenge Grant for six years for the Associate Degree Nursing Program which also impacted other health occupations programs (see Attachment).

ELEMENTS OF THE STRATEGIC GOAL OF COMPUTER LITERACY 1979

Systems Analysis and Design

Language Proficiency
- Data Processing
- Engineering

Application
- Computer Aided Design (CAD)
- Computer Aided Manufacturing (CAM)
- Inventory Control
- Statistical Quality Control

Conducting Longitudinal Studies of Student Progress

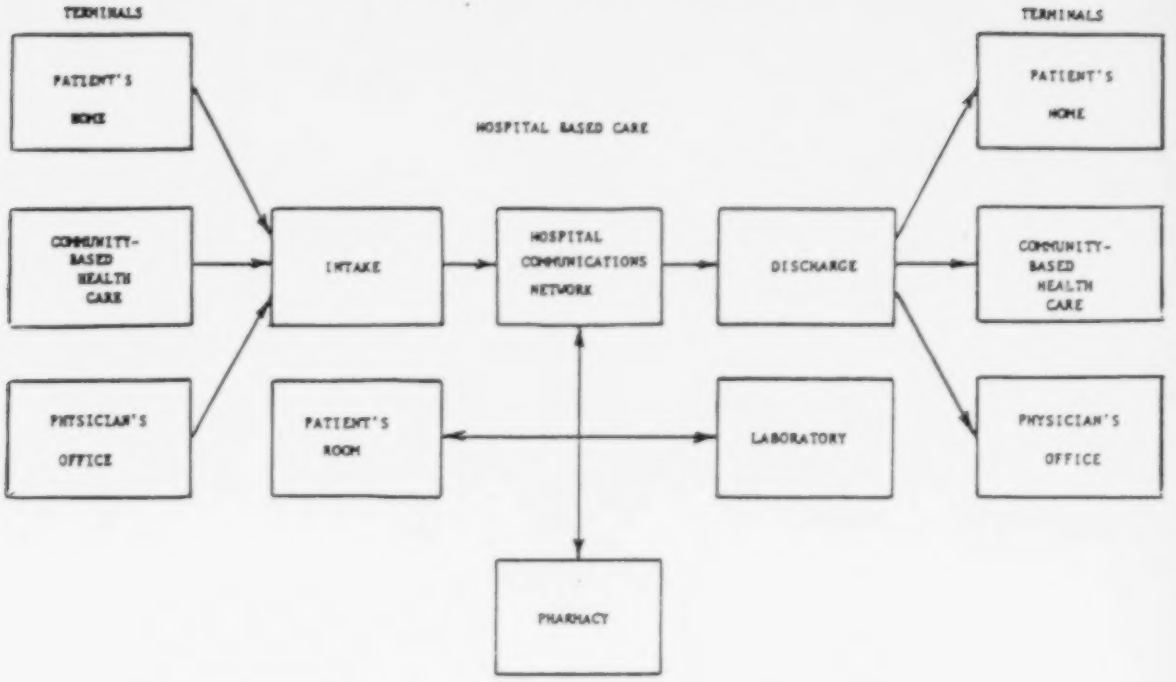
Computer Assisted/Managed Instruction
- Writing a Program
- Using a Program

Use of Optical Mark Sensing Equipment
- Upgrading Student Data Base
- Test Grading

Use of Word Processing Equipment as Input

Reading a Printout

THE HEALTH CARE ELECTRONIC COMMUNICATIONS NETWORK



MULTI-YEAR PLAN

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5

Alternative "Ways to Get Credit" were specified and protocols were developed and implemented. A Comprehensive Learning Center was created to be responsive to individual needs and move in the direction of greater flexibility (Groff, 1986). NCTC was 1 of 7 colleges featured in Computers Serving Students: The Community College Way which included Dallas, Maricopa, Mercer, Miami-Dade, Pima, and Southwestern (Leslie, 1986).

Judith Leslie provided leadership in leading personnel in conceptualizing a "Framework for Formulating an Institutional Technological Profile." Institutional functions were listed as (a) instruction, (b) instructional support, (c) student services, and (d) institutional port. Phases of technology were (a) record keeping, (b) communications, (c) creative use of technology such as CAI and CAD/CAM, (d) decision making, and (e) artificial intelligence (see Attachment).

Vertical articulation within a bureaucratic layered nonsystem, with different governance structures that often compete for the same fiscal resources, has always been a problem for education at various levels. The Tennessee Department of Education and the Tennessee Board of Regents asked Memphis City Schools (MCS) and Shelby State Community College (SSCC) to create a Middle College High School (MCHS) modeled after the very successful LaGuardia Community College - New York City MCHS that demonstrated that reengineering can positively impact on completion of high school with high level standards and increase college participation rates for at-risk youth. A planning team comprised of three representatives from MCS and SSCC met throughout 1986-87 and conceptualized a high school with grades 10-12 on the Midtown Campus of SSCC. MCHS began operations with 82 10th grade students in fall 1987. In fall 1988, an additional group of sophomores were admitted and some of the juniors completed high school graduation requirements while taking college freshmen courses.

Vertical articulation received new impetus from the tech prep associate degree program. Although the academic college preparatory track had been articulated reasonably well because, in part, college entrance requirements had been specified, high school vocational programs tended not to be well aligned postsecondary technical courses, certificates, and programs. Typing in high school was often duplicated at the postsecondary level and the Licensed Practical Nursing (LPN) program often contained skill requirements that were duplicated in the Associate Degree Nursing (ASN) program. Career mobility was also limited because programs too often restricted to academic credits or experiencial learning, even if it was equivalent or sometimes exceeded minimum standards, that could be transferred into the program.

FRAMEWORK FOR FORMULATING AN INSTITUTIONAL TECHNOLOGICAL PROFILE

Institutional Function	**TECHNOLOGY**				
	Phase One (Record Keeping	Phase Two (Communication)	Phase Three Creative Use of Information Technology; CA1, CAD/ CAM	Phase Four (Decision-Making)	Phase Five (Artificial Intelligence)
Instruction	Select Applications Individualized Basis	Limited All-in-one Office Automation	Data Processing Curricula Faculty Literacy Program CA1, TICCIT, TEACH CAD/ CAM, ESL		
Instructional Support	Library Automation Fitness Centers Laboratories	Library Automation	Laboratories		
Student Services	Student Information Systems FAMS Degree Audit Transcript Job Placement	Student On-line Registration CARL Electronic Articulation			
Institutional Port	HRS, FRS Budget Purchasing Alumni Maintenance	All-in-one Office Automation Videotext Upload/Download Telecommunications Training	Budget End-user Programming Training		

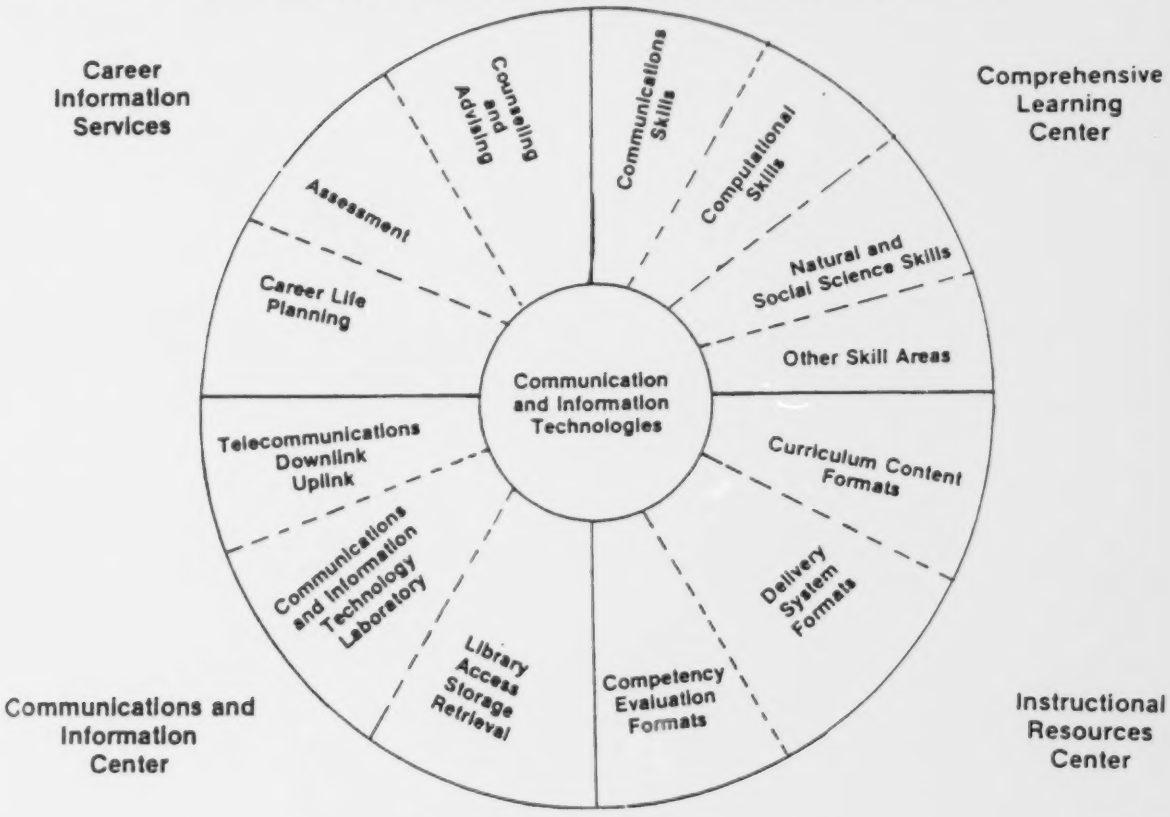
Advances in communication and information technologies made it possible to envision entirely new learning delivery systems in the 1980s. In 1984, the New York Institute of Technology announced it was possible to complete a four-year degree program via personal computer and modem. Technology intensive delivery systems were described in Any Home A Classroom (Halperin, 1984) and The Education Utility (Gooler, 1986). Thus, scenario classifications in the mid 1980s shifted to (a) contemporary traditional, (b) partial technological, and (c) technology intensive. Following a comprehensive contextual analysis and concensus on qualitative improvements, an institution in Texas specified three scenarios and an action plan using these categories.

"Components of a Human Resources Development System" was developed at Shelby State Community College at the end of the strategic planning process in 1987. The core of the HRD system is communication and information technologies. The Comprehensive Learning Center would have offer courses in an "open entry, open exit" self paced format in communications skills, computational skills, natural and social sciences, and other areas. An Instructional Resources Center would assist faculty convert traditional courses to distance education formats. A Communications and Information Center would assist faculty in the delivery of distance education courses. Career Information Services would ultimately deliver campus based services to community agencies and homes (see Attachment). How do you envision communications technologies impacting education?

Shelby State Community College developed an enrollment management system around the concept of "Student Success" which included institutional outreach, inquiry response, admissions, enrollment services, registration and retention and broad stroke functions were listed for each area (see Attachments). The "IDEAL" was specified for each of these functions. A detailed functional analysis was completed for the existing organization as a prelude for specifying an action plan (see Attachments).

An analysis of alternative education completed in the late 1980s and presented at a workshop for the Department of Education of Arkansas in 1989 yielded the following categories of alternative education: within contemporary traditional education (CTE), partial technological/ Technology intensive deschooling (PTD), collaborative lifelong learning (CLL), and solution based education (SBL), an extension of outcomes based education (see Attachment). There are now several "High Technology High Schools" on college campuses. Following a comprehensive contextual analysis and concensus on qualitative improvements, an institution in Arizona specified scenarios for CTE, PTD, CLL, and SBL. How would you envision a technology intensive delivery system in the future?

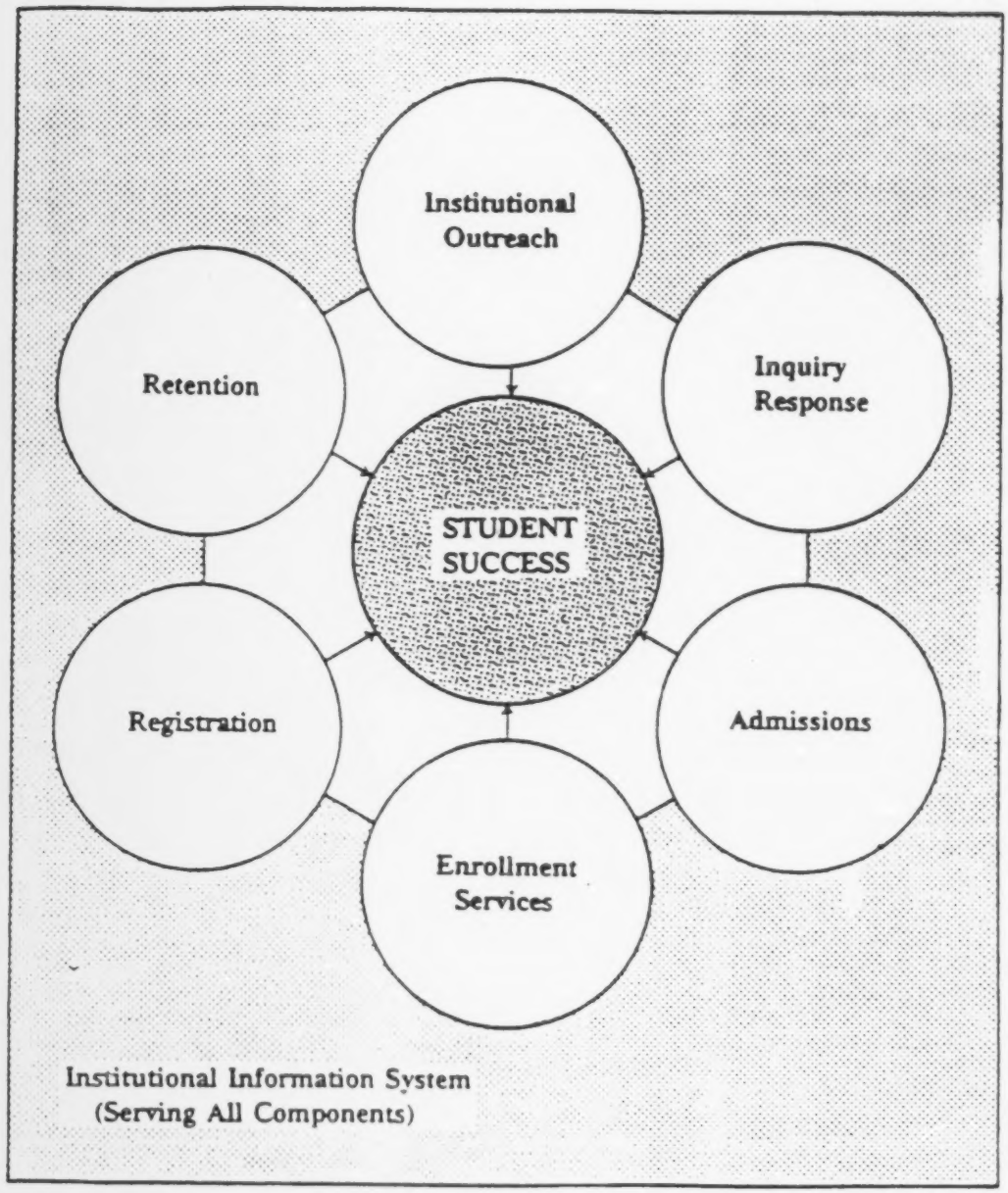
COMPONENTS OF A HUMAN RESOURCES DEVELOPMENT SYSTEM



MULTI-YEAR PLAN

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5

ENROLLMENT MANAGEMENT SYSTEM



ALTERNATIVE EDUCATION

1. Contemporary Traditional Education (CTE) Models

    a. Within a CTE Classroom
    b. Within a CTE School
    c. Within a Single Subject - Math, Science, Humanities
    d. Between Subjects - Math and Science, English, and Social Sciences
    e. Between Tracks - Academic and Vocational
    f. Between Schools Within a District - Level, Magnet Schools
    g. Between Districts - "Choice"
    h. Within a State - North Carolina School of Arts
    i. Special Focus - "At-Risk", Drop Out Prevention, Disciplines, Articulated, Differentiated/Developmental Curriculum, Learning Styles, Pregnant Females, Substance Abusers, Cultural Diversity, Substance Abuse, Personal Abuse
    j. Between Layers - Middle College High School

2. Partial Technological Deschooling (PTD) Models

    a. Distant Learning Systems
    b. Apple Classrooms of Tomorrow - Elementary Level
    c. IBM's School of the Future - Secondary Level
    d. The Education Utility

3. Collaborative Lifelong Learning (CLL) Models

    a. Cooperative Education
    b. Clinical Affiliations
    C. Compacts - Academic Credit for Public Service
    d. Partnerships

4. Solution Based Learning (PBL) Models

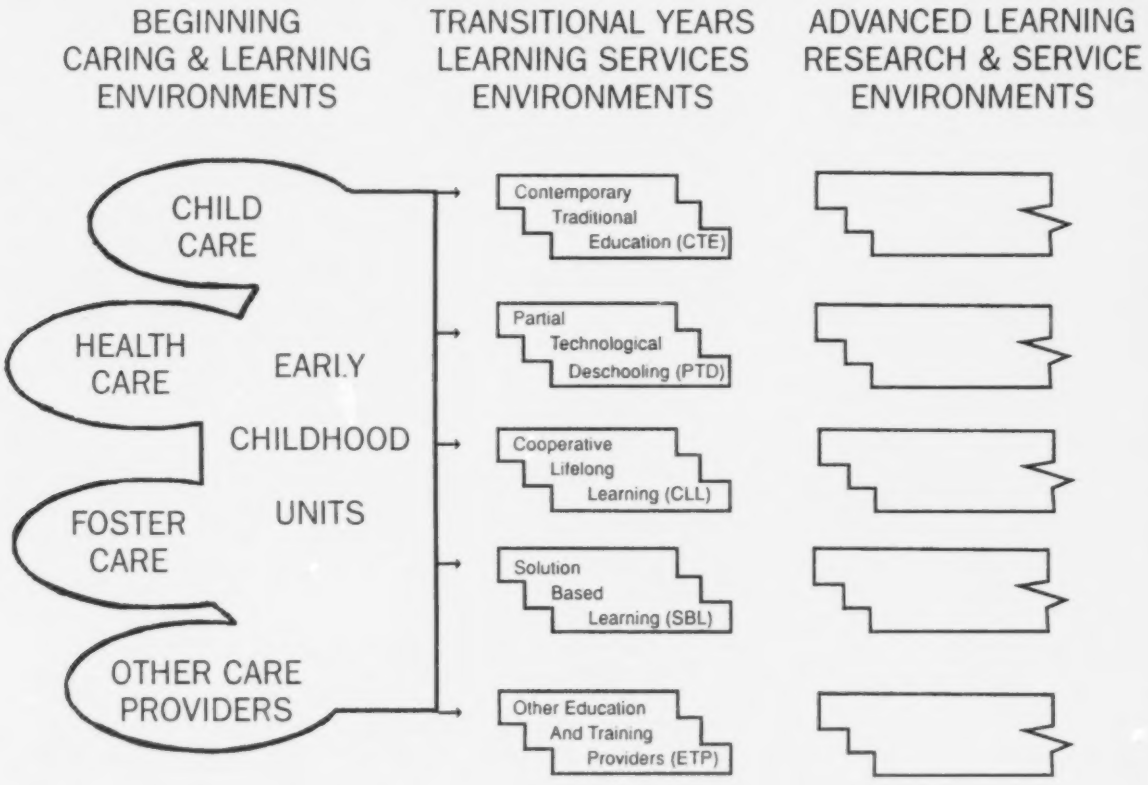
5. Other Education and Training Provider (ETP) Models

    a. Nontraditional Private Providers
    b. Corporate Sponsored Providers
    c. Home Based Instruction, Correspondence

6. Role of Support Units

    a. Library and Instructional Materials
    b. Instructional Development and Media
    c. Student Assessment, Counseling, Diagnostic Services
    d. Administration
    e. Boards-Advisory, Committees, Directors, Foundations, Trustees

INFO ERA LEARNING COMMUNITIES OF THE FUTURE



TOWARD LEARNING COMMUNITIES OF THE FUTURE

EARLY 1990s	MID 1990s	LATE 1990s
Conditions of Society Trend Analysis & Extrapolation	⇨ Conceptual Frameworks 1. CTE 2. PTD 3. CLL 4. SBE	⇨ Design & Experiment Phase

Problem based learning was a conceptual framework developed by McMaster University School of Medicine in Ontario, Canada, many years ago. About 10 universities in the U.S. have adopted problem based learning. The John A. Burns School of Medicine at the University of Hawaii was the first school to convert entirely to the new system. Others, including Harvard Medical School, offer a choice of traditional or problem based tracks or a hybrid of the two. During the first two or three years of traditional medical training, students spend long days in lectures and late nights in memorizing overwhelming volumes of theory or fact. In traditional medical school training, students rarely discuss patients or their symptoms. Interns taught the traditional way have shown a great deal of dependence on their supervisors in finding answers to problems. In the problem based education approach, students interact with patients and research a variety of medical science subjects in order to solve specific clinical health problems rather than attending lectures that cover only one subject such as pathology or physiology. The mass of knowledge is changing so rapidly that by the time a student graduates from medical school, much of what was memorized is out of date. The World Health Organization published an evaluation of the 10 schools using problem-based learning. Problem solving skills and retention of medical students increased in the alternative problem based educational format (Lomont, 1989).

The Nebraska Community College Association made a commitment to strategic planning in 1991. The process involved 68 statewide and community policy makers, college personnel, and students. The strategic plan specified eight areas for emphasis. Following adoption of the plan by the NCCA Board of Directors at the Annual Meeting in February 1992, the Mid Plains Community College Area implemented a process that included 103 persons: fourteen members of the community, nineteen students, thirty faculty, eight support staff, and nineteen administrators. Superintendents of private and public schools participated. The contextual analysis was completed between spring and fall. Visioning and scenario development began on November 2. Following a visions presentation, participants joined one of eight groups, two each on Health and Human Services, Business and Industry, Government and Public Service, and Education and Training to discuss changes taking place and implications for Mid-Plains. Following a brief presentation on alternative education, eight groups began to specify scenarios: General Education Core; Remedial and Developmental Education; Vocational-Technical Education On-Site and Mobile; Remedial and Developmental Education via Distant Delivery into Community, Home, and Workplace; Next Generation Tech-Prep Programs; Rural Community Leadership & Social Infrastructure Development; Lifelong Consumer Controlled Learning for Adult Literacy; and Solution Based Outcomes Learning (see Attachment).

PM GENERAL EDUCATION CORE	SP NEXT GENERATION TECH-PREP PROGRAMS
PH REM & DEV ED VIA TECH ON SITE	SH RURAL COMMUNITY LDRSHIP & SOCIAL INFRASTRUCTURE DEV
PM VOC-TECH ED ON SITE & MOBILE	SP LIFELONG CONSUMER CONTROLLED LEARNING FOR ADULT LITERACY
PH REM & DEV ED DISTANT DELIVERY COMMUNITY, HOME, WORK	SH SOLUTION BASED LEARNING FOR HEALTH CAREERS

New American Schools Development Corporation (NASDC), projects, STAR Schools Program, Global Schoolhouse Project, and other projects are creating entirely new human resources development systems based on (a) research from the cognitive sciences and (b) advances in communication and information technologies. Many of the new systems are based on problem solving formats which integrate curriculum "disciplines." Advances in communication and information technologies will accelerate with the integration of multilingual voice activated devices, and videoconferencing. New conceptual frameworks for human resources development, an integrated theme approach in a borderless and seamless solution based format, can be envisioned so that learning modules can be transmitted into community agencies, homes and workplaces. Knowledge-based education paradigms are emerging. Terrance Overlock (1995) used Branson's model to help professionals at Northern Maine Technical College co-create a multi-year action plan for multimedia that can lead to online learning with the 36 high school in the area (see Attachment).

The purpose of visioning and scenario development is to create an image of a next generation system so that the preferred scenario helps to "pull" people to a higher level of commitment, to transform people and institutions. Burns (1978) drew the distinction between transactional management and transformational leadership. Transactional management occurs when individuals make contact for the purpose of the exchange of something which is often physical. Transformational learning involves mutual stimulation and elevation of attitudes, beliefs, and values. One transformational learning experience is specifying assumptions about future conditions. What assumptions should be made about emerging regions of the world and their impact on the economy, establishments, and jobs? What assumptions should be made about advances in technology and competencies and skills needed for the world of work?

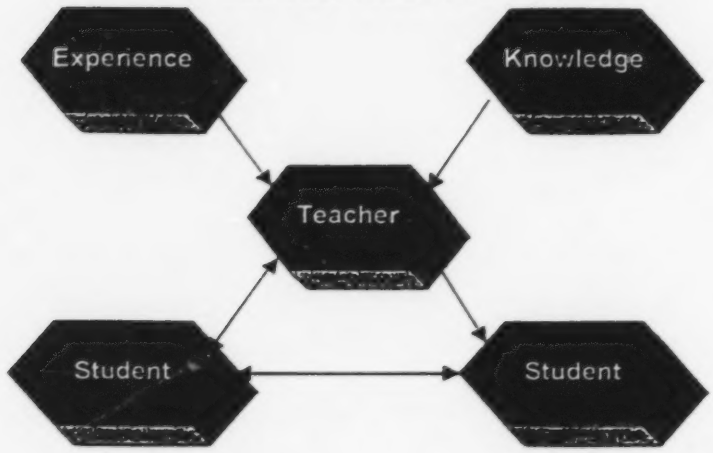
A second transformational learning experience is analyzing beliefs and principles based on research about effective learning, the use of technology to enhance learning, and effective and healthy establishments. What assumptions should be made about learning to learn and human resources development systems in the 21st Century?

Clarity in mission and vision with preferred scenario is a necessary prerequisite to clarity in action plan and effective use of resources. The extent to which people participate in the creation of mission and vision is related to the commitment to transforming them into reality.

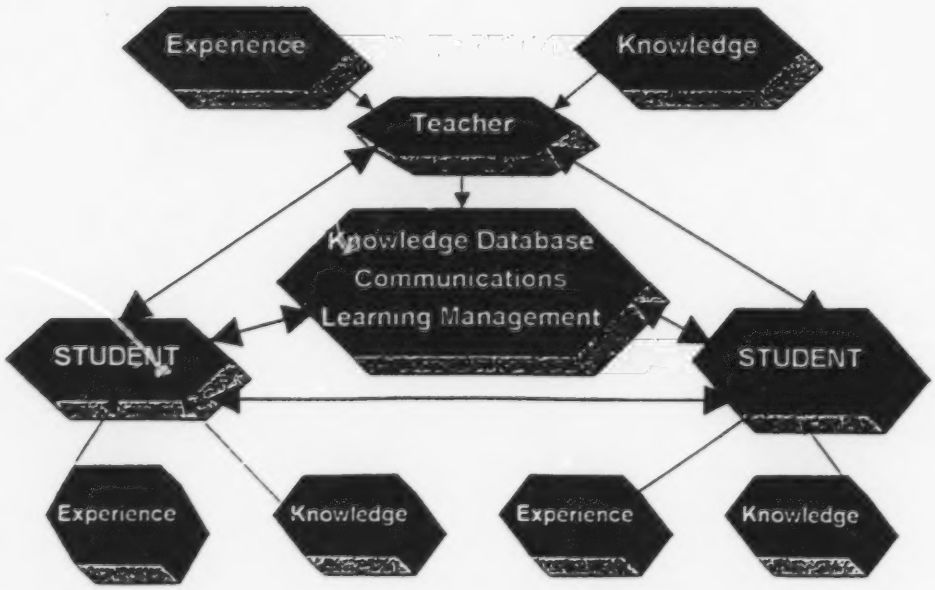
The contextual analysis yields insight about the **REAL**. Visions and preferred scenario creation yields insight about the **IDEAL**. The **REAL** compared with the **IDEAL** yields **NEEDS** that must be expressed in an action plan.

CHANGING PARADIGMS

CURRENT PARADIGM



Technology-Based Paradigm



Note: Adapted from Center for Educational Technology, Florida State University (1992)

Summary of Visions and Alternative Scenarios

All establishments need a clear, concise mission statement about the "business" and essential purposes of the enterprise. Although a mission statement is necessary, it is insufficient. **WHAT** business the enterprise is conducting needs to be accompanied with a business plan of **WHERE** it is heading. From a human resources development perspective, most service providers and stakeholders have not critically reviewed the mission statement and only a very few have ever participated in modifying or creating a mission statement. Unfortunate as that is, even fewer have been active participants in a strategic planning process. Fewer yet have ever participated in a visions creation or a scenario development process. Imagine the empowerment that can occur when providers and stakeholders are active participants in a serious **envisioning the future** process.

The contextual analysis phase could have yielded (a) lists of strengths, weaknesses, opportunities, and threats and (b) a process of matching strengths with opportunities. The third step, setting a limited number of strategic directions, could have occurred soon after the task of matching strengths with opportunities or the task could have been deferred until after visions and scenarios co-creation. Even when an excellent strategic planning process is designed and implemented in a one year time frame such as that which is suggested in the "Plan to Plan" section, a limited number of active participants will raise their level of awareness and understanding of the future for their area of responsibility. How would you design a visioning experience to help stakeholders understand the broader social issues and the benefits of the human resources development strategy of strategic planning? Where does strategic planning end? How often should an establishment repeat the analysis, visions and action steps?

Setting priorities and creating a conceptual framework for action plans follows visions creation. Establishments can alter their **mission, programs, people, and technology.** An establishment could change its mission. For example, because technological skills are becoming increasingly more important, several states are implementing K-16 technology education programs, converting area vocational schools into institutes, and converting technical institutes into other types of institutions. Priorities must be set for areas and intervention strategies selected for implementation (see Attachment). Conceptual frameworks must be developed for action plans. Schools and colleges participating in America 2000 will probably use the Goals America format (see Attachment). How would you select a strategic direction, like the electronic delivery of programs and services, and lead the co-creation of a multi-year action plan?

CLARITY IN PRIORITIES FOR OD-HRD INTERVENTION STRATEGIES

Categories of Variables	Pre	Intervention Strategy	Post
MISSION			
Retain Mission			
Focus the Emphasis			
General Education			
Transfer Programs			
Occupational Programs			
Community Service			
Remedial & Developmental			
Research & Development			
Technology Transfer			
Alter Mission			
PRIMARY PROGRAMS			
Core General Education			
Communication			
Computational			
Natural Science			
Social Science			
Technology			
Certificate and Degree			
Business			
Education			
Engineering			
Health			
Public Service			
Seminary & Theology			
Support For Primary Programs			
Library & Media Center			
Comprehensive Learning Lab			
Instructional Materials Lab			
SECONDARY SUPPORT PROGRAMS			
Student Services			
Administrative Services			
PEOPLE			
Board Members			
Full Time Faculty			
Part Time Faculty			
Staff			
Administrators			
Legislators			
Other Stakeholders			
TECHNOLOGY (and Know-How)			
Strategic Planning			
Continuous Quality Improvement (CQI) with Benchmarking			
Technology Plan			

America 2000 Goals and Objectives, Public Law 103-227

1995-96 1996-97 1997-98 1998-99

1. School Readiness
a. Preschool programs
b. Parent as first teacher
c. Nutrition & health care

2. School Completion
a. Reduce dropout rate
b. Reduce minority gap

3. Student Achievement
a. Improve performance
b. Basic skill subjects
c. Citizenship
d. Physical education
e. Language
e. Diverse cultures

4. Teacher Education and Professional Development
a. Access to meet student needs
b. Access to emerging new methods
c. Attract new talent
d. Establish partnerships

5. Math and Science (+ Technology)
a. Student outcomes
b. Teachers
c. Undergrad & grad

6. Adult Literacy and Lifelong Learning
a. Education and work
b. Worker knowledge
c. Programs, (+ Libraries)
d. Enter college
e. College skills
f. Adult literacy

7. Safe, Discipline, and Drug-Free
a. Drugs and alcohol policy
b. Entire community action
c. Free of violence
d. K-12 D & A curriculum
e. D & A in K-12 health ed
f. Community based teams
g. Eliminate sexual harassment

Action Plan Specification

The **REAL** compared with the **IDEAL** results in **NEEDS** that must be expressed in an **action plan.**

Strategic directions must be transformed into a multi-year action plan with components for (a) organizational development (OD) and (b) human resources development (HRD). OD components include clarity and ownership in mission, focus on quality of primary programs with appropriate support programs, fostering a positive climate and culture, and promoting research based principles of institutional effectiveness. HRD components include conceptual, interactive, and technical competencies and skills. An establishment achieves maximum synergism when OD and HRD components are in harmony and built upon the principles of Total Quality Commitment (see Attachment).

What is necessary to help each learner become "ready to learn?" What are the multi-year increments of growth that should be achieved to promote understanding of cultural diversity and learning preferences? What is required to create and implement a science, technology, and society program? What is necessary to create an articulated and integrated math, science, and technology curriculum with benchmarks between the layers of education? What is required to internationalize the curriculum? How would a team of persons create an action plan for performance-based or solution-based education? What is necessary to create an "open entry - open exit" course, sequence of courses, or program? How would a partial technological or technology intensive delivery system unfold over a multi-year time frame? What steps will be required to incorporate the results of the occupational skills projects into the curriculum? What would be required to create a Middle College High School? How would a group create a plan for an electronic learning community?

<u>Ready To Learn</u> (Boyer, 1991) has multiple dimensions which are both people centered and system centered. In its broadest people centered sense, concepts of ready to learn apply to young children in the early years, youth in the transitional years, adults, teachers, status managers, and policy makers. Oregon School Superintendent Norma Paulus stated on September 16, 1992

> Lack of school readiness among many children "is a dirty, ugly secret in every elementary school in this country. Too many children are unloved, unwashed, and unfed, and it's been dragging down the system...drugs, violence, and the breakdown of the family. We've been trying to deal with the problem too late...(putting) all our money in with the... 17-year old when we should have been putting it into parenting and early childhood development.

STRATEGIC THINKING: MAXIMUM SYNERGISM =

LEADERSHIP THROUGH

OD + HRD + TQC

Pre Program Audit	Year 1	Year 2	Year 3	Year 4	Year 5	Post Program Audit
Organizational Development						
Mission Primary Program Secondary Program Climate/Culture Institutional Effectiveness						
Human Resources Development						
Conceptual Interactive Technical						
Hoped for Outcomes	←				→	Actual Outcomes

MULTI-YEAR PLAN

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5

At the adult consumer level, many generations of workers were graduated with inadequate technical skills for today's workplaces, not to mention tomorrow's workplaces. In addition, many are the output of a factory sorting and training process which did not prepare them for learning to learn or give them self esteem to cope with life's problems. Many adults even less fortunate have experienced only dysfunctional establishments and are caught in a cycle of poverty and social services, including incarceration at a cost to society far greater than an up front investment.

Almost all service providers and managers were "bluebirds" of traditional education at the undergraduate and graduate levels. They were "trained" to be service providers in traditional education and may not be receptive to alternatives even with the best transformational learning experiences such as those stated in the previous section. At the policy level, ready to learn may become even more complex in that the process of obtaining board members sometimes poses ethical and moral dilemmas when creating policy. Is a board member encumbered by a constituency or is s/he ready to learn from the contextual analysis and transformational learning experience and then develop a coherent position and help others through a similar learning process? There is considerable evidence that far too many boards are engaged in bad habits of micromanaging education at a time when creative statesman- like leadership is needed for rethinking about restructuring and revitalizing the learning industry (Danzberger, 1992).

The primary business of education is human resources development. The critical outcome is learning to learn. For consumers, the focus is on competencies and skills which are necessary to be a **citizen, family member, worker, and lifelong learner** in the society of which they will be a part -- the 21st Century. For providers, the focus is on (a) the mosaic of developmentally appropriate learning experiences for "each" unique individual and (b) how can s/he co-create and continuously refine the set of learning experiences through a strategy such as Total Quality Commitment (TQC). Each establishment needs a conceptual framework to provide coherence and meaning to the strategic planning process. The framework should have a set of categories which are used at the system and unit levels to refine strategic directions into system goal, then unit goals and objectives, and then individual objectives.

It would be impossible to create a multi-year plan for each of the topics in the various sections of the document. In Education Reform for the '90s: The School Board Agenda, the National School Boards Association (1990) focuses on five areas: (a) restructuring, (b) technology, (c) vocational education, (d) teachers and administrators, and (e) early childhood education. A few examples follow.

Children, Youth, and Families

One program of high priority could be to reduce the devastating impact that economic-societal restructuring is having on children and youth. What adjustments can be made to improve readiness to learn at all levels? A study by the Carnegie Corp. of New York (1994) ranked the United States last among industrialized nations in three categories: health care for children, subsidized child care, and family leaves for parents with young children. Lisbeth Schorr, a lecturer in social medicine at Harvard University stated

> The scientific evidence documenting the early roots of crime and violence is overwhelming.... Society pays dearly when the fundamental building blocks of health development are not in place during the infant and toddler years.

Nationally, less than 60% of all children were fully vaccinated at age 2 in 1992.

Colleges and school districts could collaborate on better services for preschool youth and their families. Okefenokee Technical Institute, GA, was fortunate to have a strategic humanist as director of the Child Care Program. Christine D. Loftin enrolled in a doctoral program with emphasis on problem solving in fall of 1991. Along with didactic coursework, she researched four areas which would contribute to a large-scale problem to be solved. These practicums paved the way for a major applied research project to co-create a FULL SERVICE COMMUNITY FAMILY CENTER. The strategic plan was completed in late winter of 1994 and funded by the OTI Board of Trustees. The Center is operational and (a) impacting on the quality of life of families and (b) providing a training facility for students in the Child Care Program. The Center represents a first step in the infrastructure in re-engineered services for young children and families. Imagine the potential to access databases from the Center for Disease Control and Prevention (CDC) and the Georgia Division of Public Health. A major applied research project by John J. Conklin, a survey of graduate social work programs in Canada and the U.S., indicated that service providers are not being trained to use technology and do not use contemporary technology in agencies. A state that makes a policy decision to shift from intervention to wellness could include access to online research and data from CDC through electronic technology.

College and school districts could co-create a plan with goals and objectives to impact on key result areas. High level outcomes can be achieved when purposeful human activity is coordinated through multiple agencies. The Community Learning and Information Network (CLIN) could be a resource for interagency strategic planning to create a 21st Century Learning and Health Care in the Home (1992).

21ST CENTURY LEARNING AND HEALTH CARE IN THE HOME:

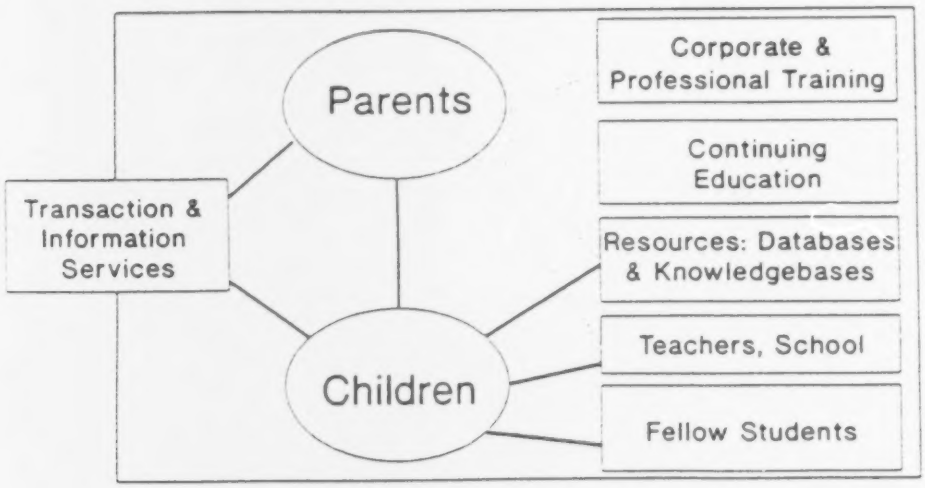
CREATING A NATIONAL TELECOMMUNICATIONS NETWORK

108 North Alfred Street
Alexandria, VA 22314
(703) 684-5880

1631 Suter's Lane N.W.
Washington, D.C. 20007
(202) 333-6035

POTENTIAL ELECTRONIC FAMILY LEARNING ENVIRONMENT

FIGURE 1



America 2000 provides a conceptual framework for a multi-year action plan for **Goal 1 Readiness.**

Goal 1 has three objectives:

1. All disadvantaged and disabled children will have access to high quality and developmentally appropriate preschool programs that help children prepare for school.
2. Every parent in America will be a child's first teacher and devote time each day helping his or her preschool child learn; parents will have access to the training and support they need.
3. Children will receive the nutrition and health care needed to arrive at school with healthy minds and bodies, and the number of low birthweight babies will be significantly reduced through enhanced prenatal health systems.

"Full Service Community Family Centers" could be a means for (a) meeting some of the above-listed objectives and (b) providing a career ladder for the preparation of competent workers in early intervention like in Finland. What is the size of the problem of economic restructuring and the impact on children, families, and youth? How complex is the maze of services from the U.S. Departments of Agriculture, Education, and Health and Human Services? What are the questions and issues that have to be addressed? What issues in policy, human resources development, curriculum, technology for technology education, instructional technology, and facilities will the project address? What problem solving methodology and procedures would you recommend if you were going to undertake a major applied research project on this essential topic? What could be the format for the multiyear action plan? What are the HRD conceptual, interpersonal and technical competencies and skills necessary to co-develop, co-implement, and co-evaluate a "Full Service Family Center?"

<u>Conceptual Framework for a Multiyear Action Plan</u>

From Awareness & Understanding to Commitment & Dedication

	Year 1	Year 2	Year 3	Year 4	Year 5
Policy					
HRD					
Curriculum					
Tech for tech ed.					
Instructional tech					
Facilities					

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K-16 Seamless Solution-Based Curriculum

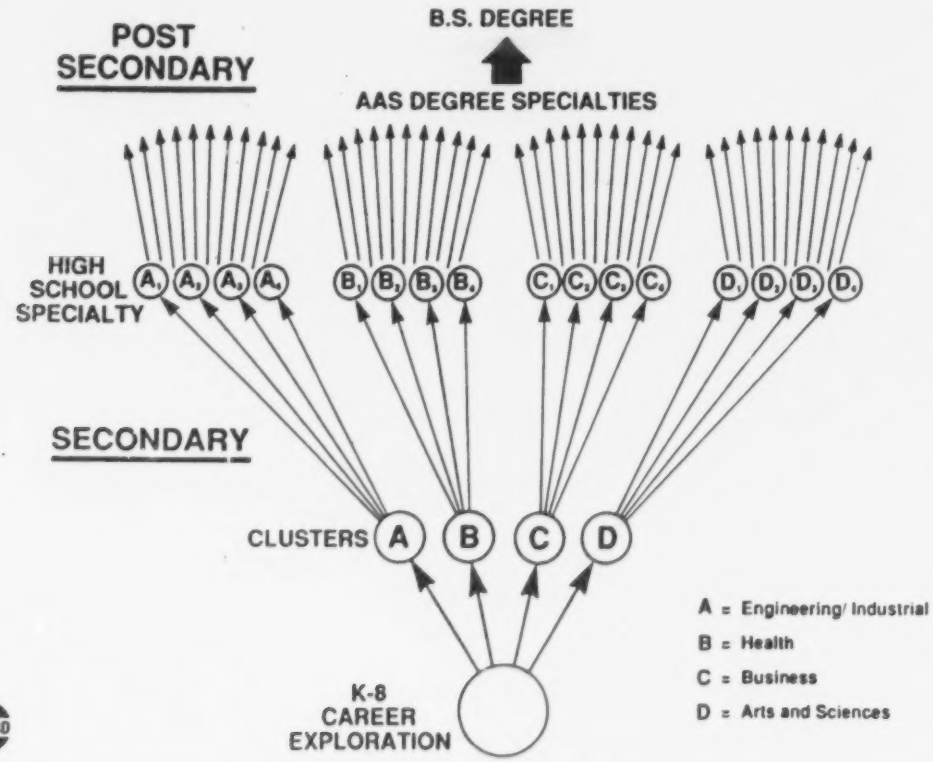
A knowledge-based, technology education, curriculum focused on solutions applies to all levels of education. What could be more exciting to children in the early years than learning about (a) animals and how they grow up into healthy pets - **bio-related technology education** and (b) advertising and packaging for favorite toys - communications involving **graphic arts and printing** including prepress, press, and postpress functions? What could be more exciting for youth than analyzing **communication systems** and how humans and machines input, process and output various categories of data and information to yield "intelligence?"

Good health and nutrition are the foundation upon which masterpieces can be created. The process begins with sound bodies for childbearing youth through prenatal care and parenting. We are still in the early stage of development in terms of understanding human body chemistry. However, the agricultural industry has perfected that type of science for other species of the animal kingdom and makes use of contemporary technology in applying that knowledge.

How could a K-16 seamless solution-based curriculum be co-created to increase the likelihood of producing more and better **High Performance Learners and Workers**? How can such a curriculum contribute to increased performance in basic areas such as communication skills of reading, writing, listening, and speaking? National voluntary standards have been specified in core areas of mathematics, science, history, arts, civics, geography, and English. In addition, national voluntary standards are being specified and learning materials developed in 22 occupational areas including agricultural biotechnology, bioscience, chemical process industries, health care, etc (see Appendix C).

Vertical articulation, horizonal integration, and synchronization between education and training and workplace needs have been problems that are difficult to solve in the contemporary bureaucratic layered and discipline centered traditional format. Vertical articulation is hampered by the layers between elementary, middle, high, and post high school tiers. Horizontal integration is difficult to achieve because teachers and faculty are trained in the disciplines of math, science, and technology while problems are interdisciplinary in character. The tech-prep associate degree has been an interim step promoted by many people from the Center for Education and Training for Employment, the Vocational-Technical Education Consortium of States, and the Center for Occupational Research and Development. Several organizations have co-created conceptual frameworks of doing a better job of integration within a traditional format. The next increment will include an action plan to convert to an interdisciplinary online solution based format.

SECONDARY PROGRAM CLUSTERING FOR TPAD



4+2 TPAD MODEL: TECHNOLOGY CLUSTER
Telecommunications Technician

	HIGH SCHOOL				POSTSECONDARY			
SUBJECT	Freshman	Sophomore	Junior	Senior	Freshman A	Freshman B	Sophomore A	Sophomore B
MATH	Applied Math I	Applied Math II	Geometry or Elective*	Algebra II	Trigonometry	Calculus or Statistics		
ENGLISH	English I, II, and III and Applied Communication (4 units)				Technical Communications			
SCIENCE	Applied Biology / Chem.	Principles of Technology I	Principles of Technology II		Physics for Technicians			
HUMANITIES	Geography, History, and Government (4 units)						Interpersonal/ Ind. Relations	
OTHER	Health / PE	Computer Literacy		Elective*				Economics in Technology
OTHER	Technology Education	Elective*						
TECHNICAL CORE				Technical Graphics (1/2)		Ind. Processes (Fabrication)	Ind. Electrical Power & Equip	Instrumentation & Control
TECHNICAL CORE				Electronic Fab. and Testing (1/2)		Properties of Materials	Mechanical & Fluid Devices	Elective #
TECHNICAL SPECIALTY			DC/AC Circuits	Active Devices I	Analog Devices & Systems	Linear ICs & Analog Circuits	Computer Applications	Digital Devices & Techniques
TECHNICAL SPECIALTY			Circuit Analysis	Digital Electronics	Fiber-Optics Communications	Digital Fund. & Circuits	RF/Microwave Communications	Telecommun. Networks/Equip.

* Fine Arts or Foreign Language, for example
\# Introduction to Lasers, for example

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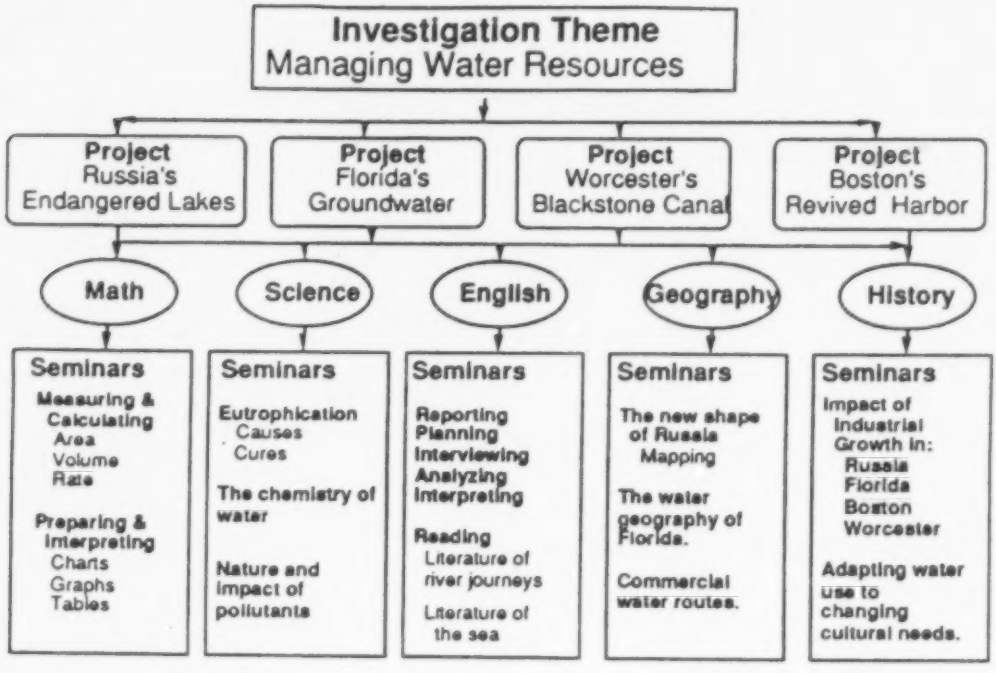

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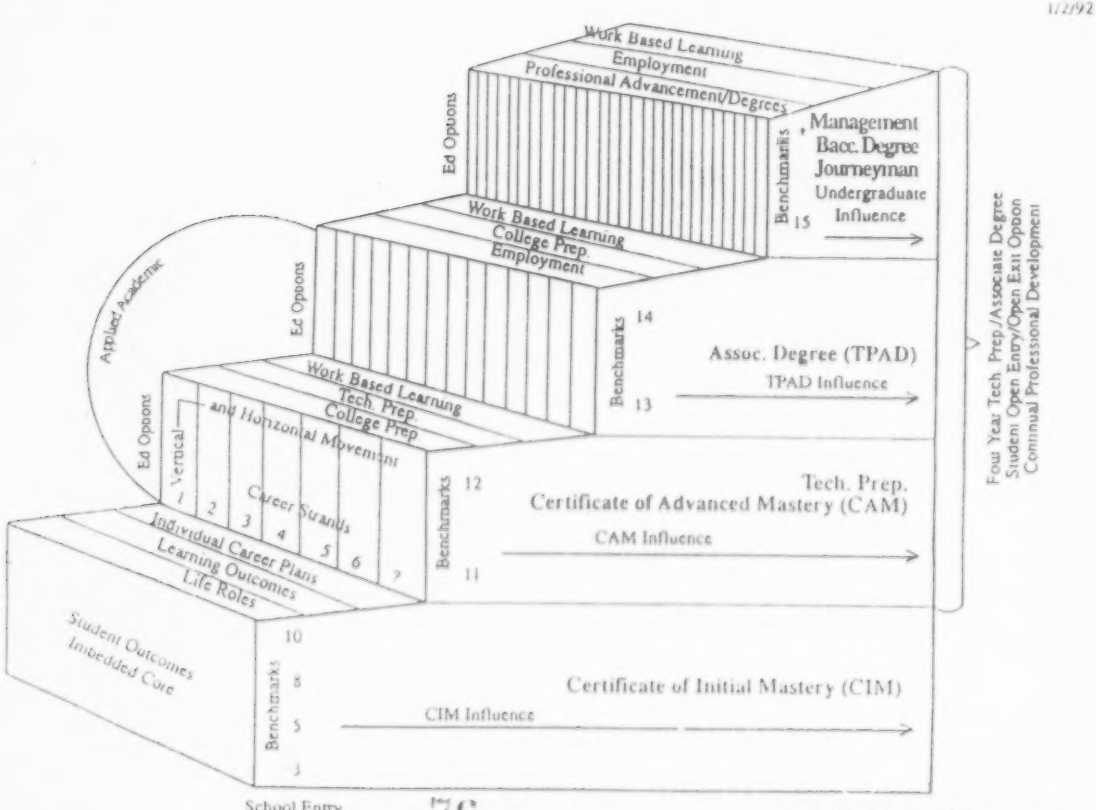

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What are the significant issues relating to the problem of an inadequately trained workforce? What problem solving methodology and procedures could be used to co-create a multi-year action plan to develop, implement, and evaluate technology education learning modules in an online format?

Conceptual Framework for a Multiyear Action Plan

From Awareness & Understanding to Commitment & Dedication

	Year 1	Year 2	Year 3	Year 4	Year 5
Policy					
equality	- includes equal access to technology				
quality					
fairness					
HRD					
conceptual					
interpersonal					
technical					
Curriculum					
content & format					
delivery system					
evaluation format					
Tech for tech ed.					
K thru 16					
adult literacy					
Instructional tech					
multimedia					
online					
technology					
Facilities					
existing					
new					

Communication Systems: Graphic Arts and Printing

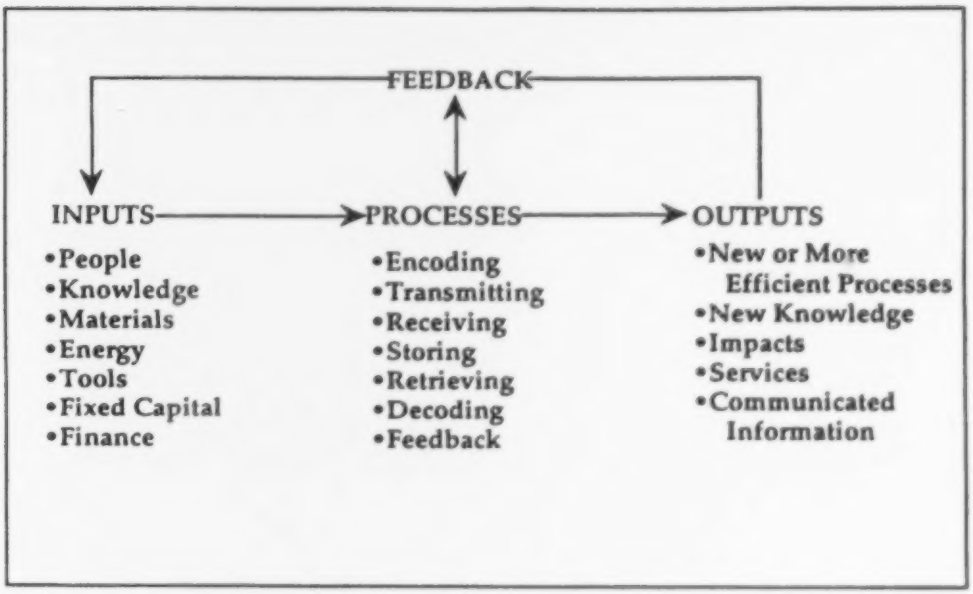
An extremely high priority relates to understanding the communication systems that are evolving and integrating that body of knowledge into a curriculum with developmentally appropriate content and delivery system formats. Business is already using voice activated PCs that transmit audio, data, and voice to multiple locations simultaneously. Within the next few years it will be possible to send high quality education and training in an open entry - open exit format into a community agency, home, school site, or workplace. Genuine partnerships between education at all levels and the private sector are emerging and they will create a seamless articulated and integrated set of learning experiences with generic competencies and domain specific skills. Domain specific skills could include the voluntary standards for the 22 occupational projects funded by the U.S. Departments of Education and Labor.

A policy statement such as "All students should have access to databases and information highways from home and institution" requires careful analysis in developing the education technology plans. Availability of contemporary technology to access Internet is the civil rights issue of the decade. And, the U.S. is only in the first wave of basic technology. Educational technology includes the hardware and software for technology education and the application of technology to enhance all learning.

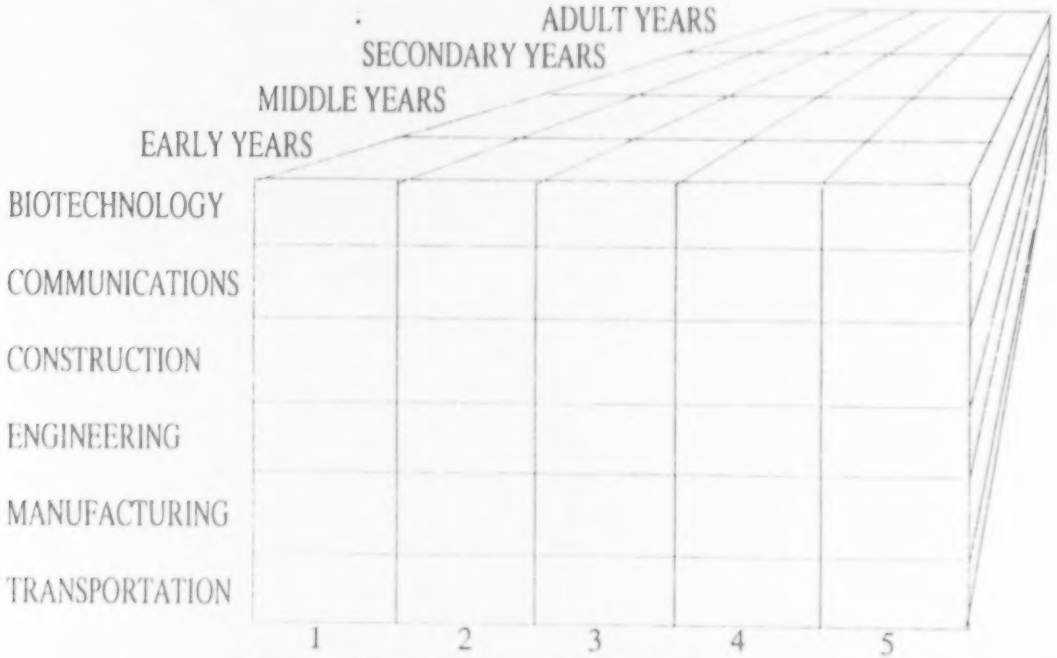
A Communication System Task Force (CSTF) could provide direction for the program. The CSTF could include private and public sector representatives. The CSTF could recommend projects that could be developed over the next few years. College and schools, with private sector establishment partners, could become the lead institution for communications technology in the region.

Graphic arts and printing (GAP) are an integral part of the communication system. GAP is critical because it relates to effective communication, cultural diversity, multiple intelligences, and the seven ways of learning. GAP is essential because it relates to literacy, productivity, and democracy. The Research and Engineering Council of the Graphic Arts Industry, located in Chadds Ford, PA, analyzes basic research, patents, and trends in the industry (Critical Trends, 1989, 1994). The Graphic Arts Technical Foundation (GATF) in Pittsburgh, PA, engages in some basic research and provides training for the industry. GATF coordinates the "Printing Skill and Knowledge" occupational standards project. Understanding the "Evolution of the Textbook: From Print to Multimedia" would also be important in co-creating a K-16 electronic online seamless program in GAP (Greenfield, 1993; Groff, 1994, ED 352 126).

THE COMMUNICATION SYSTEM



BORDERLESS & SEAMLESS SOLUTION BASED LEARNING



CONTINUOUS QUALITY IMPROVEMENT BENCHMARKS
TO PRODUCE HIGH PERFORMANCE LEARNER WORKERS

Citizens, faculty and teachers from various disciplines, and students through "service learning contracts" could specify a series of problems to be solved and develop materials for multiple intelligences for learners at several stages of development. These learning packages could be tested in a paper format and then refined for online delivery. A group of students could develop a modular technology curriculum for exploratory agriculture education and a second groups work on a similar project in communications, graphic arts, and printing. Imagine the impact of delivery of a series of modules into the feeder elementary schools or through CLIN, the Agricultural Satellite Network, or the Black College Satellite Network. Then, imagine the impact of the delivery of modules through the interactive "global classroom" of the Department of Defense Dependent Schools (DoDDS) or to areas such as in Afghanistan and Haiti where conditions are extreme.

A parallel tandem program would be the creation of distance education learning modules in bio-related education that could be distributed in a similar manner. This program requires considerable analysis because of policy issues. Another parallel program would be the creation of distance education learning modules that relate to democracy as practiced in the U.S. and other countries and then extending our understanding of other cultures and political systems.

The creation of distance education learning modules and delivering them will require new habits of heart and mind. Young children have very little difficulty adjusting to contemporary technology. A comprehensive program would have to be designed and implemented to familiarize teachers with technology which would lead them from levels of awareness and understanding to high levels of commitment and use. The program could begin with "Highway Construction 101" to become familiar with advances in research and development, the impact of science and technology, and the implications for human resources development. That series could be followed with "Net Repair 102" to understand internet networks, NSFNET supercomputers, and online and satellite systems. A third series could be "Global Messages 103" to learn about learning communities of the future, cultural diversity and how people and societies differ, and electronic publishing and "systems." "Prepress" and "press" functions have changed dramatically in the last decade and education and training providers need "live" experiences.

Human resources development for teachers could be delivered in a didactic format with some instruction offered in laboratories for hands-on experience. Instruction could also be offered in a multitech format with selected modules available in an online format. The "Learning Styles" menu could help teachers access the latest in research by Drs. Rita and Kenneth Dunn and others (see Appendix D).

What significant issues must be addressed in policy, HRD, curriculum, technology, and facilities? What problem solving methodology and procedures could be used to co-create a multi-year action plan to develop, implement, and evaluate technology education learning modules in an online format in communications, graphic arts and printing?

Conceptual Framework for a Multiyear Action Plan

From Awareness & Understanding to Commitment & Dedication

	Year 1 Year 2 Year 3 Year 4 Year 5
Policy equality quality fairness	By 2000, all children & young adults have access to online training K-16. By 2005, all adults will have access to online training through alliances. By 2010, the learning community will have access to networked multimedia. By 2020, equal access for all people.
HRD conceptual interpersonal technical	First year, "Highway Construction 101," Net Repair 102, & Global Messages 103 will be offered to understand advances in science and technology and their impact on HRD and the implications for "Creating and Sustaining Learning Learning Communities in a Digital Era"
Curriculum content & format delivery system evaluation format	
Tech for tech ed. K thru 16 educ adult literacy	
Instructional tech multimedia online technology	
Facilities	

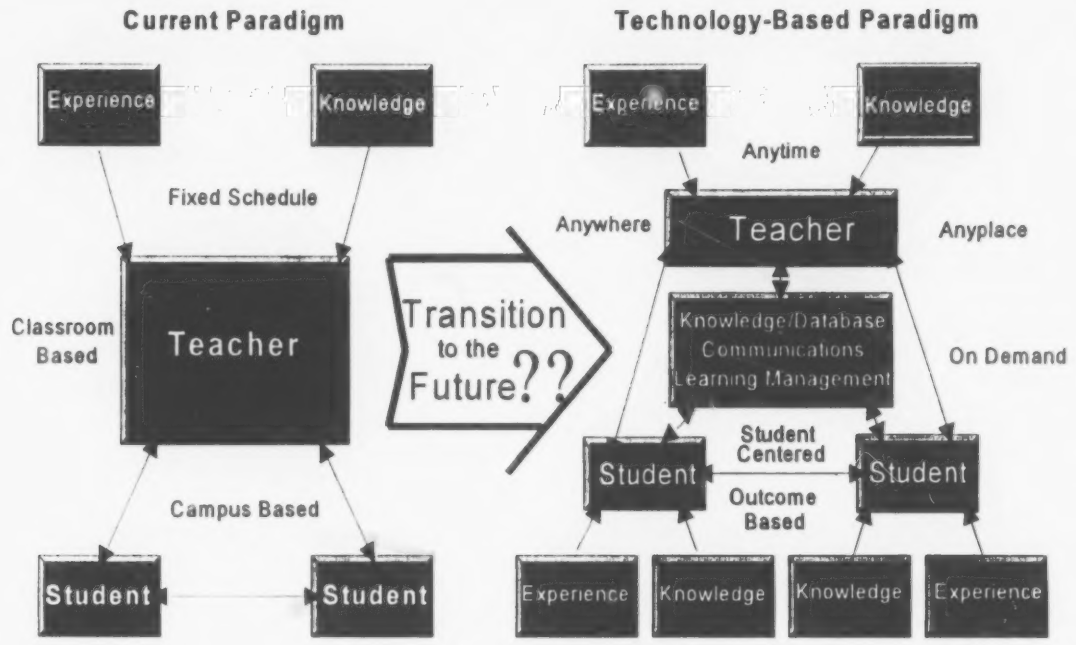
The Changing Education and Training Paradigm

Curriculum has three formats: content format, delivery system format, and evaluation format. Content format reform can involve voluntary standards in core subjects and 22 occupational skills projects. **Delivery system formats** began to become technology intensive in the 1980s. Imagine completing an undergraduate degree as early as 1984 and a masters degree in 1986 through your PC at home or at work. **Evaluation formats** have expanded to include "authentic" and self growth assessments. A knowledge-based problem-solving format is emerging from the application of state-of-the-art know-how and technology. New American School Development Corporation (NASDC) projects are attempting to develop new education paradigms and disseminate that know-how. At the two-year college level, the League of Innovation in the Community College and Jones Educational Networks formed a partnership to form the International Community College which will use cable, computer technology, satellite and wireless technology to create a 21st century learning paradigm.

Dr. Robert K. Branson (1990) has pioneered the changing educational paradigms. School-based student learning was dependent upon a teacher-focused paradigm which was often discipline-centered and textbook driven. A limited range of know-how and technology has yielded the current paradigm. One critical issue is how to better manage contemporary traditional education while designing new world class systems which can yield better effectiveness and efficiency. Terrence Overlock (1995) developed a multi-year plan for the integration of multimedia technology into the learning environment at Northern Maine Technical College (NMTC), an institution with cooperative tech prep programs with 36 schools in the Northeast one-third of the state.

Education has merely grafted a first wave of technology onto traditional education. The first wave of technology will be followed by other more complex integrated technology that should become integral to the learning process, not just a graft. Few leaders are adequately prepared for re-engineering contemporary traditional education, for creating new "full service" more effective learning systems, or for the first wave of restructuring that is currently occurring. Two critical issues are (a) how to help current practicing managers adjust to changing circumstances and (b) how to prepare "'Third Wave' Transformational Leaders" for future waves of technology and the necessary re-engineering.

What significant issues must be addresses in policy, HRD, curriculum, technology, and facilities? What problem solving procedures could be used to co-create a multi-year action plan to develop, implement, and evaluate technology intensive networked multimedia delivery systems?



CHANGING PARADIGMS

Overlock, T H. (1995) Development of a multiyear plan for the integration of technology into the learning environment at Northern Maine Technical College. Fort Lauderdale, FL: Unpublished major applied research project, Nova Southeastern University.

Note: Adapted from Branson, R K. (April, 1990). Issues in the design of schooling: Changing the paradigm. Educational Technology, 30, 7-10

MULTI-YEAR PLAN

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5

Education and Training for Each Individual

One of the principles of democracy in the U.S. is equal access to high quality programs at a reasonable cost. Equality of educational opportunity is an evolving concept. Advances in research and development in the cognitive sciences and in communications and information technologies make it possible to envision entirely new ways of achieving the dual mission priorities of equality and quality.

Research about learning styles has yielded insights about basic types of intelligences and ways to teach. From an organizational development perspective, institutions can go beyond "Ways to Get Credit" and Comprehensive Learning Centers to supplement course objectives in a traditional classroom and/or laboratory format. Open entry - open exit learning centers evolved in the 1980s so that individuals could go to a site and progress through a course in a self paced manner. In the early 1990s, some centers evolved into hubs for (a) completing sequences of courses for a variety of different learning preferences and (b) delivering courses through different formats via a variety of technologies.

Enrollment Management (EM) is a generic concept that relates to (a) a philosophy of customer service and (b) a continuum of services extending from advertising, marketing and recruitment through inquiry responses, admissions, enrollment services, registration, retention, and consumer follow through. What are the central issues relative to the development of a high quality philosophy of customer service or to any aspect of the continuum of services? What are the critical issues of the "problem" that are hindering the overall effectiveness that need attention? What are the aspects of the problem in the context in which it exists that need to be explored to determine cause and effect? What aspects of organizational development (OD) and human resources development (HRD) must be considered to have an effective EM system in a traditional format or a computer based distance delivery format? What types of databases are required for either format for a variety of purposes?

Education and training programs and services are being delivered in site based traditional formats in a variety of different types of establishments. In addition, education and training programs and services are being delivered in a wide range of technology-based formats described in this document. Students have selected projects that cover the entire spectrum of projects. Many students have sought help in accessing resources electronically and exemplary work by students. Some information is available in Appendix D.

Conclusions

The world is undergoing fundamental restructuring. The European Community, the Pacific Rim countries, and the North American Free Trade Agreement countries are adjusting their economies in order to be the dominant region in the new world order. The nations, regions, and states that will be the beneficiaries of the structural change will be the ones that adjust and restructure systems and human resources development infrastructure to produce the knowledge workers who are needed for the new information era. All nations belonging to the Organisation for Economic Co-operation and Development are engaged in thinking strategically about the learning enterprise in the 21st Century.

The U.S. needs private and public sector establishments committed to inventing "Learning Communities" that empower humans to lead as opposed to merely adjusting to conditions. "Learning Communities" could accept a challenge such as "To design and perfect a human resources development system to produce knowledge workers of the 21st Century." While not all the knowledge is available to invent next generation learning systems, that must not deter us from striving toward such a goal. The words have a "future pull" magnetism to them that suggest that community leaders, practitioners, and scholars with expertise in theory, research and applications should be able to create bold, visionary systems with increased excellence, somewhat akin to New American Schools Development Corporation projects.

We are privileged to live during an extraordinary time, the turning of an era. We are surrounded with technologies which will fundamentally transform society and make possible the emergence of a learning enterprise with the potential to achieve higher levels of excellence and equality than can possibly be fully imagined by even the most experienced futurists. To achieve the dual mission priorities will require <u>New Habits of Mind and Heart</u>. Achievement of the mission priorities will require collectively focusing our minds on best practices and exemplary research to co-create visions of better systems and then having the heart to transform a preferred scenario into a multi-year action plan with appropriate resources.

* * * * * * * * *

> We'll either move ahead to a high wage, high skill, high growth economy or we will be left behind...to compete with the Third World countries that call for little but strong backs and low wages.
>
> Governor Zell Miller, Georgia
> America 2000 Leadership Conference
> January 13, 1992

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APPENDIXES

Appendix A

GLOSSARY

Human Resources Development
ECD 8008

Nova University

Programs in Higher Education

Robert W. Hill

Graduate Fellow

November 1993

HUMAN RESOURCES DEVELOPMENT (HRD) Glossary:

- **Action Learning/Research:** A cyclical process of research-change-research-change, etc. Research produces ideas for change. The changes are then introduced, and more research determines the effects of the change. This in turn produces new ideas for change and so on.

- **Andragogy:** The art and science of helping adults learn, in contrast to pedagogy as the art and science of teaching children.

- **ASTD (American Society for Training and Development):** The nonprofit professional association representing approximately 50,000 practitioners, managers, administrators, educators, and researchers in the field of HRD.

- **Basic Workplace Skills:** Reading, writing, and math deficiencies have been the first to appear in the workplace; but increasingly, skills such as problem solving, listening, negotiation, and knowing how to learn, as well as teamwork, self-esteem. leadership and motivation/goal setting, organizational effectiveness, employability/career development, oral and listening skills, and creative thinking are also viewed as essential.

- **BARS (Behaviorally-Anchored Rating Scales):** A form of appraisal ratings that differ from other scales (e.g., typical graphic rating scales) primarily in the process by which they are developed and the fact that the focus is on employee behaviors rather than on traits, which is usually the case.

- **Behavior Modeling:** A process of demonstrating appropriate behavior in training and also on the job. When used in the classroom, trainees may be asked to demonstrate the behavior. When practiced on the job, the employee's supervisor uses, or models, the desired behavior in daily activities.

- **Buzz Group:** Also called "break-out groups," these small groups of six or fewer participants meeting as part of a larger group. Usually all groups are meeting in the same room (hence the buzzing sound that gives it its name) for a limited period of time.

- **CAI (Computer-Aided Instruction):** One sits down at a computer terminal and works with a program that's supposed to teach one something. Students interact directly with instruction presented by computer-monitored equipment.

- **CBT (Computer-Based Training):** Self-paced programmed instruction that provides trainees with immediate reinforcement of correct responses, direction to the source of correct material when errors are made, and practice with the skill or knowledge.

- **CD (Career Development):** The focus of assuring an alignment of individual career planning and organization career-management processes to achieve an optimal match of individual and organizational needs.

- **Collaborative Lifelong Learning:** Learning that takes place after a degree in a more formal setting, in concert with an organization, one's colleagues, or family.

- **Continuing Education:** Education and training programs for adult learners that grew out of the late 1960s adult education movement. College credit or continuing education units CEUs) may be awarded for participation.

- **Cost-Benefit Analysis:** From operations research, a method of evaluating the implications of alternative courses of action used in selecting training.

- **Creativity Training:** A program popular in the 1990s with the most common approach of focusing on freeing the imaginative right brain from the domination of the logical left.

- **Decentralization:** When control or authority over the organization is spread widely from its central administrators to department heads and others farther down the administrative ladder

- **Dyad:** A pair of employees used in training break-outs.

- **Employee Education:** Various programs (including career education, continuing education, occupational education, and cooperative education), that are offered to meet employee educational needs.

- **Environmental Scanning:** The name for a structured examination of the future external environment. It is a systematic procedure for monitoring the world in which the organization receives its sustenance, for the purpose of identifying opportunities and threats.

- **Experiential Learning:** A learning process in which the content of what is to be learned is experienced as directly as possible, in contrast to being read about in a book or talked about in lecture and discussion.

- **External Environment:** An organization functions in an external environment consisting of two broad components: (1) the general public, consisting of everyone not directly involved in - or affected by - the organization; and (2) external stakeholders, consisting of everyone directly involved in - or affected by - the firm but not working inside it.

• **Formative Evaluation:** Rigorous, advance testing of instructional content and presentational methods before widespread use of them. Formative evaluation takes its name from using evaluation to *form* instruction.

• **Hawthorne Effect:** The term derives from Elton Mayo's classic experiments begun in the mid-twenties at Western Electric's Hawthorne plants. In everyday usage, the term has come to mean initial improvement in performance following a newly introduced change.

• **Human Potential Movement:** A term still in force today, although it is loosely applied to both the human relations training popular in the 1960s and the so-called personal growth training that absorbed the "Me Generation" in the 1970s and included sensitivity training, encounter groups, sensory deprivation tanks, Rolfing, and various forms of meditation to Arica, est, primal screaming, T'ai Chi, and astral projection.

• **Human Relations Training:** The basic premise "that things get better when people get along" is still alive and well and currently goes by such names as communications training, team building, and participative management.

• **HRD (Human Resource Development):** The integrated use of training and development, organization development, and career development to improve individual, group, and organizational effectiveness.

• **HRM (Human Resource Management):** The term has come to be used in place of *personnel* and as a synonym for *human resource practice* and refers to such activities as selection and staffing, compensation and benefits, employee assistance, and union/labor relations.

• **Instructional Design:** Planning of the methods, techniques, and learning events that will be used in a learning situation.

• **Interactive Video:** Two-way video delivery of information that allows the trainee to choose among alternatives and to see the consequences of those choices.

• **Interventions:** Strategies for producing change under the banner of organizational development (OD) are typically called interventions. Some of the most familiar are team-building, action research, survey feedback, and "techno-structural intervention."

• **JIT (Just in Time) Production:** The classic four-step learning process developed during WWII to train one worker to do one job. "Tell, show, do, and review" was usual shorthand for the JIT process, which involved lecture, demonstration, performance tryout, and critique phases.

• **JTPA (Job Training Partnership Act):** In 1982, this legislation placed greater reliance on the private sector through local Private Industry Councils (PICs) in providing job training and employment opportunities. JTPA focused on the training of displaced workers, the economically disadvantaged, and two youth programs, the Job Corps and the Summer Youth Employment Program.

• **Learning Environments:** The total setting in which a learner is expected to achieve learning objectives.

• **Learning/Instructional Objectives:** An instructional objective clearly stated in learner-oriented terms. It may originate with the learner.

• **MBO (Management by Objectives):** A process of goal setting and performance measurement where goals are set by a unit's managers in consultation with higher management.

• **Management Development Programs:** Those organization-sponsored programs aimed at educating supervisory and/or nonsupervisory employees above and beyond the immediate technical requirements of their jobs.

• **Manpower Development Training Act (MDTA):** In 1962 the U.S. Congress established a broad program for assisting unemployed workers in obtaining employment through the development of new or increased skills.

• **Mission:** Also called *purpose* is the fundamental reason for an organization's existence. It defines activities the organization performs or intends to perform and the kind of organization it is or intends to be.

• **Needs Assessment:** A strategy or approach of comparing *what is* (condition) and *what should be* (criterion). Different data collection methods (e.g., interviews, surveys, observation, task analysis, employee performance appraisals, etc.) can be used to compare condition and criteria in needs assessment and thus uncover deficiencies (weaknesses) and proficiencies (strengths).

• **NGT (Nominal Group Technique):** An idea-generating procedure that permits written recording and verbal discussion of ideas for problem solving, planning, and needs assessment.

• **NSPIE (National Society for the Promotion of Industrial Education):** NSPIE was formed in 1906 at Cooper Union in New York City to provide a vehicle for ideas and standards. In 1918, NSPIE became the National Society for Vocational Education.

• **OD (Organizational Development):** An applied behavioral science approach to planned organization change concerned with assuring both healthy inter-unit and intra-unit relationships and helping groups initiate and manage change.

• **ODQ (Organizational Diagnosis Questionnaire):** Preziosi's survey-feedback instrument designed to collect data on organizational functioning. It measures the perceptions of persons in an organization or work unit to determine areas of activity that would benefit from an organization development effort.

• **Off the Shelf:** Training materials, including program packages, videos, tapes, software, c.d.'s, commercially available.

• **OJT (On-the-Job Training):** Activities conducted at the work site to help the learner develop job-related competencies while engaging in productive work at the same time.

• **Operational Planning:** Short-term planning that is the primary concern of first-line supervisors, such as annual budgets. Less risky than strategic or coordinative plans, operational plans involve scheduling and moving needed resources.

• **Participative Management:** Systematic efforts to get more people, and particularly lower-level people, involved in the planning and decision-making activities that concern them and their work.

• **Performance Appraisal:** The periodic or continuous evaluation of the contribution of individuals and groups within the organization.

• **Personnel Management:** The recruitment, selection, maintenance, development, utilization of, and accommodation to human resources by organizations. The term has been mostly replaced by Human Resource Management or HRM.

• **PERT (Program Evaluation Reviewing Techniques):** Acts a managerial tool for defining and coordinating what must be done to successfully accomplish objectives on time.

• **PPBS (Planning Programming Budgeting Systems):** A process that strengthens an organization's capability to do long-range planning and helps management use available resources in the most effective way to meet planned goals.

• **Pygmalion Effect:** A phenomenon or theory which holds that when the person in charge expects people to do well, they do well.

• **SBP (Strategic Business Planning):** In the most fundamental sense, involves choosing how an organization will compete. It requires consideration of an organization's present internal strengths and weaknesses and future external threats or opportunities.

• **Sensitivity Training:** The collection of methods for improving the individual's sensitivity to himself and others. Popular in the 1960s and 1970s, this type of human relations training is seldom used today.

• **SHRD (Strategic Human Resource Development):** The process of changing an organization, stakeholders outside it, groups inside it, and people employed by it through planned learning so that they possess the knowledge and skills needed in the future.

• **Socio Technical Systems:** An organization's total system has a complete set of human activities plus interrelationships to the technical, physical, and financial resources and to the processes for turning out products and delivering services. Used in Organizational Development (OD), thinking about an organization as a sociotechnical system helps us accept the "human-machine relationships."

• **Soft Skills Training:** Those skills that tend be called "people skills" whereas "hard" skills would be technical in nature (computer programming, engineering, etc.).

• **Strategic Organization Development:** A series of steps in which managers and employees identify what group norms and organizational culture *should* exist to facilitate implementation of SBP, assess future pressures favoring change and existing pressure impeding change, compare present and future pressures, and carry out OD interventions to deal with future pressures favoring change and existing pressures impeding change.

• **Strategic Planning:** Planning that is directed toward achieving long-term goals and objectives over several years. The essence of Strategic planning and thinking is the awareness of how future conditions may affect present decisions or past actions.

• **Summative Evaluation:** After doing formative evaluation, the first step in testing instructional materials, it should be followed at a later time by summative evaluation, which takes its name from using *summed effects* of instruction for evaluative purposes. However, unlike a formative evaluation, it seeks to determine the value of the present materials for a defined target group or a particular target setting or both.

• **Survey Feedback:** A type of databased intervention which flows from surveys of the members of a system and reports the results of the survey to the group.

• **Task Analysis:** Traces its roots back to the early-twentieth century time-and-motion studies of Frederick Taylor and other scientific management proponents. Different from needs analysis, task analysis analyzes the specific activities which make up a particular work task.

• **Team Building:** The process by which work relations are improved among members of some task group in an organization using various techniques. It may be used as an organizational development intervention or as a separate activity.

• **T-Groups:** A mainstay method of the sensitivity training in the sixties and seventies, as the group usually assisted by a facilitator, typically evolved its own structure as the members of the group accomplished their task "to learn about themselves in a social context."

• **T&D (Training and Development):** Identifying, assuring, and--through planned learning --helping develop the key competencies that enable individuals to perform current or future jobs.

• **TQM (Total Quality Management):** A formally recognized process of continued, constant improvement of services and products. It is also known as Continuous Quality Improvement (CQI), Continuous Quality Management and other similar terms.

• **Vestibule Training:** The term was used to refer to training conducted off the factory floor, where duplicate equipment was available and job instruction training could go on without disturbing other workers. While its complement, *on-the-job training*, is still around, vestibule training is rarely used now. *Simulation* is sometimes used today to refer to more or less the same thing.

11/23/93
66 terms

M E M O R A N D U M

TO: Dr. Groff

FROM: Robert Hill, Graduate Fellow

RE: HRD Glossary

DATE: December 22, 1993

Thank you for your kind words regarding both my glossary and action plan for the *Human Resources Development* seminar. Here is a more current edition of the glossary than the one in which you originally saw. You have my permission (and appreciation) to use the glossary for the Tampa cluster during the winter term and elsewhere.

I will start editing the action plan for adherence to APA format and will await your comments before sending you the edited plan.

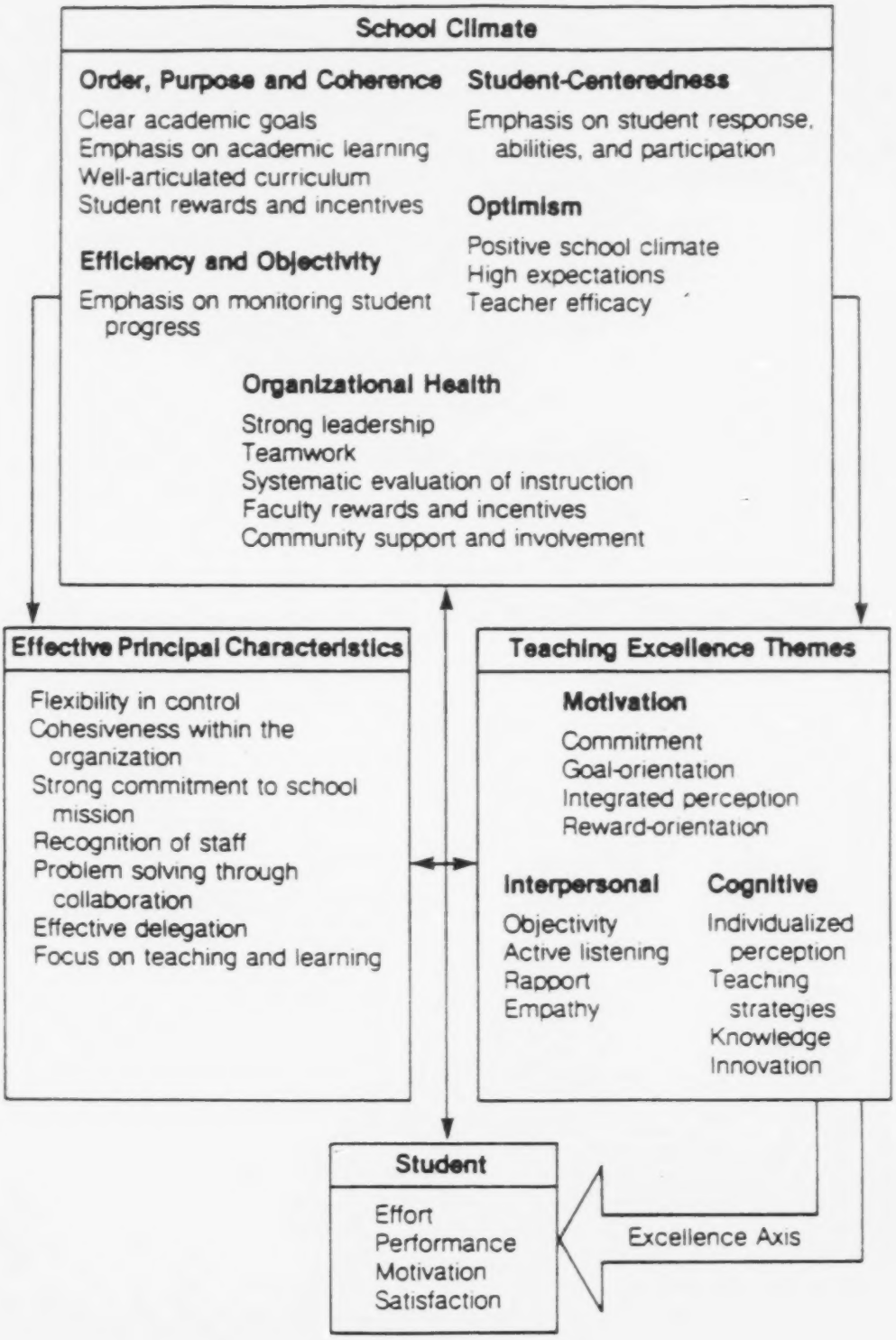
Have an enjoyable holiday!

Robert Hill

Appendix B

Audit Instruments

Roueche-Baker Integrated Model
of Excellent Schools.



Roueche-Baker Integrated Model of Excellent Schools.

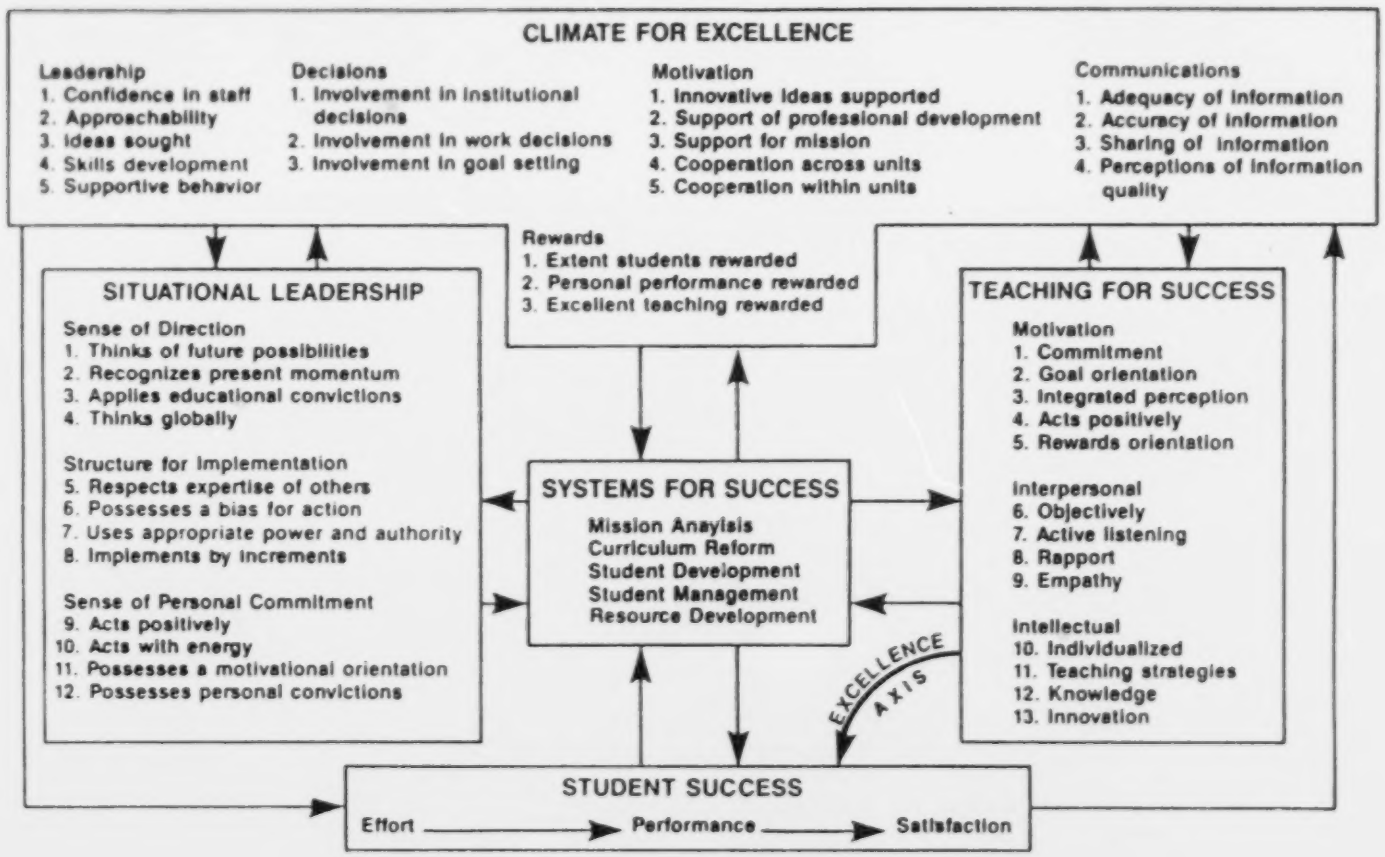
	5	4	3	2	1
School Climate					
Order , Purpose and Coherence	___	___	___	___	___
Clear academic goal					
Emphasis on academic learning					
Well-articulated curriculum					
Student rewards and incentives					
Student-Centeredness	___	___	___	___	___
Emphasis on student response, abilities, and participation					
Efficiency and Objectivity	___	___	___	___	___
Emphasis on monitoring student progress					
Optimism	___	___	___	___	___
Positive school climate					
HIgh expectations					
Teacher Efficacy					
Organizational Health	___	___	___	___	___
Strong leadership					
Teamwork					
Systematic evalulation of instruction					
Faculty rewards and incentives					
Community support and involvement					

Key:
5 High
4
3 Middle
2
1 Low

John E. Roueche and George A. Baker,III. Profiling Excellence In America's Schools. Arlington, VA: American Association of School Administrators, 1986.

Teaching Excellence Themes	5	4	3	2	1
Motivation	___	___	___	___	___
Commitment					
Goal-orientation					
Integrated perception					
Reward-orientation					
Interpersonal	___	___	___	___	___
Objectivity					
Active listening					
Rapport					
Cognitive	___	___	___	___	___
Individualized perception					
Teaching strategies					
Knowledge					
Innovation					
Effective Principal Characteristics	___	___	___	___	___
Flexibility in control					
Cohesiveness within the organization					
Strong commitment to school mission					
Recognition to staff					
Problem solving through collaboration					
Effective delegation					
Focus on teaching and learning					
Student	___	___	___	___	___
Effort					
Performance					
Motivation					
Satisfaction					

Roueche-Baker Community College Excellence Model



Roueche-Baker Community College
of Excellence Model

CLIMATE FOR EXCELLENCE	5	4	3	2	1
Leadership	___	___	___	___	___
1. Confidence in staffl					
2. Approachability					
3.. Ideas sought					
4. Skills development					
5. Supportive behavior					
Decisions	___	___	___	___	___
1. Involvement in institutional decisions					
2. Involvement in work decisions					
3. Involvement in goal setting					
Motivation	___	___	___	___	___
1. Innovative ideas supported					
2. Support of professsional development					
3. Support for mission					
4. Cooperation across units					
5. Cooperation within units					
Communications	___	___	___	___	___
1. Adequacy of information					
2. Accuracy of informationt					
3. Sharing of information					
4. Perceptions of information quality					
Rewards	___	___	___	___	___
1. Extent students rewarded					
2. Personal performance rewarded					
3. Excellent teaching rewarded					

Key:
5 High
4
3 Middle
2
1 Low

John E. Roueche and George A. Baker,III. Access & Excellence: The Open-Door College. Washing D C.: The Community College Press. 1987.

TEACHING FOR SUCCESS	5	4	3	2	1
Motivation					
1. Commitment					
2. Goal orientation					
3. Integrated perception					
4. Acts positively					
5. Rewards orientation					
Interpersonal					
6. Objectivity					
7. Active listening					
8. Rapport					
9. Empathy					
Intellectual					
10. Individualized					
11. Teaching strategies					
12. Knowledge					
13. Innovation					
SITUATIONAL LEADERSHIP					
Sense of Direction					
1. Thinks of future possibilities					
2. Recognizes present momentum					
3. Applies educational convictions					
4. Thinks globally					
Structure for Implementation					
5. Respects expertise of others					
6. Possesses a bias for action					
7. Uses appropriate power and authority					
8. Implements by increments					
Sense of Personal Commitment					
9. Acts positively					
10. Acts with energy					
11. Possesses a motivational orientation					
12. Possesses personal conviction					
SYSTEMS FOR SUCCESS					
Mission Analysis					
Curriculum Reform					
Student Development					
Student Management					
Resources Development					

COUNCIL For The ADVANCEMENT Of STANDARDS In HIGHER EDUCATION
CAS Standards and Guidelines User Survey

Spring 1994

Dear Colleague:

Information is being solicited from higher education professionals who have used the CAS Standards and Guidelines (S&Gs) in various ways during the past decade. We solicit your help as a professional identified as a probable user. Although we know that thousands of practitioners have used the standards over the years, there is no current data base that identifies who used them and how. This survey is designed to remedy that information deficit.

If you have personally used the S&Gs, please take the few minutes required to complete and return this short survey form. If you know of others at your institution or elsewhere who have used the S&Gs, please give them a copy of the survey and ask them to complete and submit it as well --or-- send us their names and addresses and we will contact them directly. Our goal is to elicit information from as many CAS Standards & Guidelines users as possible. Your help will be much appreciated.

PLEASE PRINT OR TYPE WRITTEN RESPONSES and CIRCLE OBJECTIVE RESPONSES.

USER DEMOGRAPHICS

1. USER'S NAME: _____; 2. TITLE: _____

3. ADDRESS: _____

4. INSTITUTION: _____

5. NUMBER OF STUDENTS ENROLLED: _____; 6. FUNDING TYPE INSTITUTION: Public Private

7. CARNEGIE TYPE INSTITUTION: Two-Year Liberal Arts Four-Year Comprehensive University Research University

8. PHONE, FAX, & E-MAIL: _____

USER RESPONSE [Circle All Responses That Apply]

9. S&G FUNCTIONAL AREA(S) USED: Academic Advising Admission Alcohol Minority Student Career P&P
College Unions Commuter Campus Activities Housing Greek Life Disabled Student Rec. Sports
Learning Assistance Judicial Research & Eval. Religious Orientation Counseling Women Student
Masters Preparation Program

10. PURPOSE FOR S&G USE: Professional Development Program Development New Program Development Program Evaluation
Strategic Planning Accreditation Self-Study Consultation Other:_____

11. LOCALE OF S&G USE: Institution Division Department Program Other:_____

12. WHEN USED: Continuously Annually Periodically Once-Upon-a-Time Other:_____

13. FORM OF S&G USED: 1986 Blue Book 1988-9 SAG Self Assessment Guide Other: _____

14. S&G VALUE: (1) Valueless (2) Of Minimal Value (3) Valuable (4) Highly Valuable

15. EASE OF USE: (1) Impossible to Use (2) Difficult to Use (3) Usable (4) Easy to Use

16. My Initial Introduction To CAS S&Gs Was Through: Colleague Literature Professional Development Activity
Graduate Program Professional Association Other: _____

16. What Additional Functional Area S&Gs are Needed?: _____

_____

17. What Additional Components [e.g., Mission] Should Be Included Within The S&Gs?: _____

_____

YOUR HELP IS MUCH APPRECIATED

PLEASE RETURN COMPLETED SURVEY TO: Ted K. Miller, 402 Aderhold Hall, University of Georgia, Athens, GA 30602
Fax Number (706) 542-4130 E-mail TKMILLER@UGA.CC.UGA.EDU

DIMENSIONS OF ORGANIZATIONAL HEALTH

OPEN COMMUNICATIONS

EMPLOYEE INVOLVEMENT

LEARNING AND RENEWAL

VALUED DIVERSITY

INSTITUTIONAL FAIRNESS

EQUITABLE REWARDS AND RECOGNITION

COMMON ECONOMIC SECURITY

PEOPLE-CENTERED TECHNOLOGY

HEALTH-ENHANCING WORK ENVIRONMENTS

MEANINGFUL WORK

FAMILY/WORK/LIFE BALANCE

COMMUNITY RESPONSIBILITY

ENVIRONMENTAL PROTECTION

Healthy Companies, 1420 16th St., N.W., Washington, D.C. 20034

HEALTHY COMPANIES

Changing the way we work

Dimensions

Healthy Companies has developed a values-based organizing system for investing in, managing, and developing human assets. This system consists of thirteen dimensions, closely intertwined and mutually reinforcing, for maximizing individual and organizational health and performance. The central principle of this system is "organizational health", which we believe can and should become a central goal of all work organizations, public and private, profit and nonprofit.

Open Communication

Organization openly communicates about its condition, its operations, the choices it faces, and its plans; sharing occurs at all levels.

Individuals respect the confidence of such information and participate in honest and forthright dialogue.

Employee Involvement

Organization recognizes the value of employee participation in achieving organizational objectives, actively seeks employee involvement and leadership in decision making, planning, work design and problem-solving.

Individuals participate actively, contribute ideas, take responsibility for decisions, participate in teams and assume leadership roles.

Learning And Renewal

Organization provides continuous opportunities for all of its people to learn, update, and expand their knowledge and skills; and to contribute to organizational innovation and learning.

Individuals commit to life-long learning, sharing knowledge, developing multiple skills and flexible competencies, and are responsive to opportunity.

Valued Diversity

Organization sees diversity as a source of stimulation and enrichment, assures equality of employment and opportunity, promotes tolerance, censures discrimination and prejudice, and provides opportunity for all to use their unique talents and capacities to perform to their potential.

Individuals take responsibility for bringing their unique beliefs, talents and experiences to the workplace, working effectively with the prevailing culture, valuing the differences and uniqueness of others, sharing responsibility for tolerance and the censure of discrimination and prejudice.

Institutional Fairness

Organization promotes and protects privacy, equity, respect and dissent as rights available to all employees.

Individuals observe the policies and practices of the organization, and share responsibility for improving the quality of work relations.

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A nonprofit organization partially supported by the John D. & Catherine T. MacArthur Foundation

Equitable Rewards And Recognitions	*Organization* has a motivational system that reinforces its values as well as maximizes employee potential; recognizes the contributions of individuals, rewards performance and shares profits and ownership. *Individuals* give full value in their work for the enterprise and accept the organization's multiple financial obligations.
Common Economic Security	*Organization* recognizes that its economic security and that of its employees are one and the same; vigorously seeks a common security. *Individuals* recognize that individual security is directly linked to long-term success of the organization, and share commitments and burdens.
People-Centered Technology	*Organization* seeks and applies technologies that eliminate bad jobs, provide safe and ergonomically sound work, and that enhance human capabilities and satisfaction. *Individuals* adapt to new technologies, learn how to use new tools, support innovation and technological changes which yield competitive advantage.
Health-Enhancing Work Environment	*Organization* works to promote physical and psychological health in the work-place, encourages employee pursuit of health, and takes steps to protect them from catastrophic costs of illness. *Individuals* take personal health seriously, observe safety rules, share the cost of managing health and illness; actively seek to maintain optimum fitness for work.
Meaningful Work	*Organization* inspires pride and a sense of purpose; creates jobs that have variety, integrity, significance and responsibility; and commits to high quality, ethically sound products and services. *Individuals* strive to achieve high levels of quality, ethical behavior and customer satisfaction.
Family/Work/Life Balance	*Organization* encourages and supports the employees' need to balance work. family and personal life. *Individuals* actively seek to balance their commitment to work and their family and personal life needs.
Community Responsibility	*Organization* leads and invests in public interests, provides benefit to the social well-being of the community and nation. *Individuals* share public responsibilities as active citizens and as volunteers to social good.
Environmental Protection	*Organization* commits itself to preserve and restore environmental health and engages in ecologically-sound practices. *Individuals* share similar personal commitments and responsibilities and assist the organization in fulfilling its commitment.

The Healthy Companies Dimensions are routes of conscious effort on a continuous journey toward healthier individuals, organizations and society.

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HEALTHY COMPANIES

Changing the way we work

The Healthy Companies Institute
Guiding Principles

Since we launched Healthy Companies, we have gained many valuable insights into the relationship between people and performance that have come to guide our work. A few of the most important are:

Improving organizational performance requires that companies be values-based, as well as market-driven. Organizations have a vested interest in promoting alignment not only with their goals and strategies, but also with their values and purpose, which are the glue that holds the organization together as a social system. We believe that organizations have an emotional life as well as an economic life, and that even the most well-conceived strategies will fail unless people's hearts are in the work along with their minds and bodies. As organizations move into the "white water" of rapid change, a clear fix on their values and purpose allows them to reinvent "what they do" while hanging onto "who they are." We have concluded that it is the alignment between being and doing that is critical to organizational success in the long term.

Organizational success depends on recognizing the mutual interests and reciprocal responsibilities of individuals and the organization. Most of the time, we act as if the needs and interests of organizations and individuals are different, even mutually exclusive. This is because we tend to think of organizations as machines, in which individuals need to struggle to preserve their humanity. But if we think of organizations as communities of individuals with a shared purpose and shared values, then individuals have shared responsibility for organizational success. High performance requires balance and alignment between the personal needs of individuals and the social and economic needs of the organization.

The role that leaders choose to play has a profound impact on how people influence organizational performance. Despite the conventional wisdom being peddled by management gurus about leaders needing to be superhuman, the reality is that leaders cannot be right all of the time. Leaders both shed light and impose darkness on their organizations. Shedding light requires a belief that all people have the ability to contribute to business success. What really makes a difference is when leaders can acknowledge both their strengths and their shortcomings, share themselves and their business with others, can listen and participate in dialogue, are consistent and predictable, and are willing to open all the doors.

High levels of organizational performance cannot be achieved simply by maximizing employee satisfaction. We have observed that high levels of employee dissatisfaction clearly hurt performance, but continued attempts to "make employees happy" above a threshold level of contentment appear to have a limited, even negative, impact due to the complacency and sense of entitlement that result. Empowering people to make improvements based on their own internal motivation and resources seems to have the greatest impact. Ironically, this process is accompanied by higher levels of "healthy" stress, not contentment. From this, we have concluded that higher organizational performance is achieved by finding the right balance between contentment and empowerment, security and stress, and extrinsic and intrinsic motivation.

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The greatest potential for improving organizational performance lies in the interaction among employees and customers. Currently, most organizations treat employees and customers as separate entities and try to maximize results with each independently. However, this fragmented approach tends to optimize the parts at the expense of the whole business. We have concluded that what is critical to performance is the dynamic interaction among employees and customers to create value. The challenge is to find the right balance and alignment between employees and customers, within the context of overall business goals and strategies.

Moving up the learning curve is not just a matter of collecting more data. We have noticed that organizations are collecting more and more data, yet starving for insight on how to improve performance. They assume that once they have data, they automatically have knowledge, and if they gather more data, they will have more knowledge. However, we have observed that data can only be transformed into useful and relevant information through an interactive process. People create information through conversation, then transform that information into knowledge through active experimentation. Finally, knowledge is transformed into wisdom through a process of personal reflection that connects the knowledge with a deeper and more solid structure of beliefs.

Performance measurement is a tool for learning and planning, as well as assessment. In most organizations, performance measurement involves putting some standards in place, then assessing whether people are achieving them. But we have found that measurement can also be a tool for learning and inquiry, providing feedback not only on "what people are doing," but also "how they can do things better" and "how they can do better things." It allows an organization to hold a mirror up to itself and closely examine how and why it does the things it does the way it does them. This feedback loop is essential for sound planning and continuous improvement. We believe that organizations need both kinds of feedback to be successful in the long term.

ETS
COLLEGE AND UNIVERSITY PROGRAMS

HIGHER EDUCATION FOR THE '90s

Self-study... Evaluation... Planning... Assessment

Institutional self-study has become an important part of the vitality and development of institutional growth and change. Faculty and administrators often need a variety of measures to evaluate where their institutions are now and how they might plan for the future.

As institutions face growing requirements for educational assessment and accountability, a variety of student and institutional assessment and self-study measures are needed. The effectiveness of the instruction and course structure, the quality of the academic programs, how the academic outcomes relate to the institutions' goals and objectives, and the relationship of student development and satisfaction to academic success are important concerns that can be a a part of these evaluation efforts.

Educational Testing Service (ETS) has been working with colleges and universities for a number of years, assisting them with their self-studies and planning. ETS has developed and makes available a number of instruments for these assessment purposes.

The Student Instructional Report (SIR)

Evaluating and Improving Instruction

The Student Instructional Report gives faculty the opportunity to assess student reactions to their courses and to use this information to change or improve their instructional methods and course design. With SIR, faculty can get direct feedback on such factors as course organization, faculty and student communication, lectures, and course difficulty.

Regular student evaluation of teaching allows instructors to compare the results of a course from one term to the next or to compare the effectiveness of different methods or styles of presenting course material.

The Student Instructional Report is a brief, objective questionnaire designed to aid in evaluating and improving instruction and for faculty development. Six dimensions of teaching are covered by SIR:

- Course Organization and Planning
- Faculty-Student Interaction
- Communication
- Course Difficulty and Workload
- Textbooks and Readings
- Tests and Exams

Institutions that use SIR are provided extensive comparative data based on SIR use throughout the United States and Canada. These comparative data for over 30 subject fields are available separately for two-year colleges and four-year colleges and universities, by course level, type, and size of class.

SIR results are provided in a concise, easily readable summary report for each class in which SIR is administered. Institutional summary reports that combine classes into overall reports (by department or for the total institution, for example) are also made available with SIR.

Instructors have the option of writing 10 additional questions to be included in the questionnaire. This allows instructors the opportunity to collect student responses to new classroom experiences or special instructional techniques that they may want to try with their students.

Program Self-Assessment Service (PSAS)

Getting the Most Out of the Review Process

The Program Self-Assessment Service (PSAS) provides faculty and administrators with evaluations of the academic effectiveness and student experiences at the department or program level.

PSAS is designed to help colleges and universities conduct program or departmental reviews using the judgments of those most directly involved, faculty members, students majoring in the department, and recent graduates. The responses from these three

groups together can contribute to a better understanding of the functioning and quality of a department or program. The responses from a PSAS Summary Data Report, along with other information, can suggest areas that need attention and provide a profile of information to assist in the review process.

The Program Self-Assessment Service is adapted from the successful Graduate Program Self-Assessment Service sponsored by the Graduate Record Examinations Board and the Council of Graduate Schools. The questionnaires developed for assessing graduate departments have been carefully revised to reflect the particular concerns of undergraduate departments and programs.

The Questionnaires

There are three separate questionnaires: one for faculty, one for students, and one for alumni. Each questionnaire has items that are unique to one respondent group as well as some questions that are common to all, allowing for comparisons of perceptions among the three groups.

PSAS also provides the option of including 20 locally written questions as part of the assessment. The program characteristics addressed by the questionnaires are:

- Environment for Learning
- Scholarly Excellence
- Quality of Teaching
- Faculty Concern for Students
- Curriculum
- Departmental Procedures
- Available Resources
- Student Satisfaction with Program
- Internship, Fieldwork, or Clinical Experiences
- Resource Accessibility
- Employment Assistance
- Faculty Work Environment
- Faculty Program Involvement
- Faculty Research Activities
- Faculty Professional Activities
- Student Accomplishments

Institutional Goals Inventory (IGI)
Community College Goals Inventory (CCGI)
Small College Goals Inventory (SCGI)

Perspective for Planning—Asking the Right Questions

Defining goals, establishing priorities among them, and directing present and future planning—these are among the important and complex activities facing colleges and universities.

An institutional goals survey provides a summary of the thinking of different groups of people, focuses attention on defined areas, and provides a general framework of goals and priorities from which a college can move to address specific problems.

Three goals inventories are available: the Small College Goals Inventory for small, primarily residential, liberal arts colleges; the Institutional Goals Inventory for universities and larger colleges; and the Community College Goals Inventory for community colleges and technical institutions. The format of the three inventories is the same; the content and focus are different.

A series of 90 possible institutional goals are presented, and respondents indicate their views of the *current* importance of these goals and, then, how important the respondents think they *should be*. Any members of the college community can respond: faculty members, students, administrators, trustees, alumni, and community members.

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The present (Is) and future (Should Be) format of the responses lends an important dimension to the results. Consensus and discrepancies are highlighted. The results of the goals inventories provide answers to questions such as: What are the differences in perceptions of current goals among the several groups surveyed? What areas show the greatest discrepancy between perceived present and future goals? What programs and activities support the areas seen as most important? Different planning groups within the college can focus on those goal areas most appropriate to their concerns—academic, student services, developmental, community services, and management.

Any college or university using one of the goals inventories has the option to include 20 unique goal statements written especially for that institution.

Student Reactions to College (SRC)

Enhancing the Environment for Student Development

"The principal function of planning and decision making in higher education is to enhance the environment for student development ... involving cognitive skills, socialization, and career preparation. The effectiveness of planning and decision making should be assessed in terms of the institution's contribution to these goals."*

This statement summarizes the intent of Student Reactions to College. SRC gives faculty and administrators a summary of how students view their environment, what works for them, and what doesn't. Four major dimensions of student life are addressed by the 150-item questionnaire:

- Processes of Instruction
- Program Planning
- Administrative Affairs
- Out-of-class Activities

Since responses to SRC are from a broad range of students, the picture that emerges reflects the satisfaction level across many areas of the college environment.

The 50-page Summary Data Report helps focus on specific areas of concern on which the college can take action. Responses to SRC can help a college faculty and administration better understand their students' needs and can identify problem areas and suggest solutions.

National comparative data for two-year and technical institutions and for four-year colleges and universities are provided to all institutions using SRC.

Institutional Functioning Inventory (IFI)

Taking Stock In Changing Times

Any institution planning for change needs first to take stock of itself by systematically evaluating its strengths and weaknesses and its readiness or climate for change. The Institutional Functioning Inventory was developed to assist colleges and universities in such assessment.

IFI shows how constituent groups such as faculty members, students, administrators, and trustees perceive such important aspects of campus life as:

- teaching practices
- types of programs
- governance arrangements
- administrative policies
- characteristic attitudes of groups of people

The Institutional Functioning Inventory is specific. It reflects the ways different groups within a college view how the college operates. Diversity or consensus between and among these groups can provide an important gauge of how effectively a college is functioning. An analysis of responses, interpreted with a knowledge of local conditions, can direct attention to problems and suggest actions for change.

*Alexander W. Astin in L.L. Baird and R.T. Hartnett (Eds.), *Understanding Student and Faculty Life*, San Francisco: Jossey Bass, 1980.

IFI's ability to provide an accurate reflection of the atmosphere and environment of individual campuses makes it especially appropriate for longitudinal and multicollege studies.

Comparative data are available separately for public universities, private universities, four-year state colleges, private liberal arts colleges, community colleges, and private junior colleges.

IFI is also available in Canadian English and Canadian French versions.

Services and Assistance

The basic processing and reporting services and professional assistance provided with use of the various instruments are discussed in the detailed prospectus available for each instrument.

Publications and Specimen Sets

Use the enclosed Publications Order Form to order specimen sets for each of the instruments described above plus publications and research reports of interest in institutional self-study and planning.

For Further Information

If you have questions about any aspect of the program or want to discuss your plans, please write or call us at:

Educational Testing Service
College and University Programs
Princeton, NJ 08541-0001
(609) 243-8195

57201 02399 • Y119M10 • 295864

A TOOL FOR INSTITUTIONAL SELF-ASSESSMENT

This instrument is offered as a tool to assist colleges in assessing their current status as related to the recommendations set out in **Building Communities: A Vision For A New Century.** Definitions for the rating are as follows:

Exemplary = Proven to be highly successful in meeting institutional goals. May be used as a national model.

Adequate = Meeting current needs, but must be improved and expanded upon.

Inadequate = Proven to be unsuccessful in meeting institutional goals. New directions and strategies are needed.

I. STUDENT AND FACULTY RECOMMENDATIONS

Community colleges should...	Our college is: Exemplary	Adequate	Inadequate
1. Vigorously reaffirm equality of opportunity as an essential goal.			
2. Develop an outreach plan for disadvantaged students, specifically including an Early Identification Program with surrounding schools, focusing first on junior high school students.			
3. Expand and improve outreach programs for adults, reaching such groups as displaced workers, single parents, and adults returning after military service.			
4. Develop a first-year retention program with orientation for all full-time, part-time, and evening students. Such a program would include advising, an "early warning" system, career counseling, and mentoring arrangements.			
5. Reduce, by 50 percent during the next decade, the number of students who fail to complete the program in which they are enrolled.			
6. Bring together older and younger students and those from different ethnic and racial backgrounds to enrich learning.			
7. Make a commitment to the recruitment and retention of top quality faculty and to the professional development of these colleagues.			
8. Increase the percentage of faculty members who are Black, Hispanic, and Asian, by identifying future teachers from among minority students in high schools and community colleges; and making graduate fellowships available to minority students who plan to teach in community colleges.			
9. Develop a faculty renewal plan, in consultation with the faculty, that includes campus workshops, faculty-led seminars, retreats, short-term leaves, and sabbaticals.			
10. Set aside at least two percent of the instructional budget for professional development, providing small grants to faculty members to improve teaching through an Innovative Teachers' Fund.			
11. Develop policies and programs for the selection, orientation, evaluation, and renewal of part-time faculty.			
12. Avoid the unrestrained expansion of part-time faculty and assure that the majority of credits awarded are earned in classes taught by full-time faculty.			

II. CURRICULUM RECOMMENDATIONS

Community colleges should...	Our college is: Exemplary	Adequate	Inadequate
13. Assess the reading, writing, and computational ability of all first-time community college students when they enroll.			
14. Place students who are not well prepared in an intensive developmental education program.			
15. Ensure that college students become proficient in the written and oral use of English, with all students completing a collegiate-level writing course.			
16. Teach oral and written communication in every class, with student enrollment in the basic English course restricted to no more than 50 students, and writing labs scheduled in sufficient blocks of time so that students may receive individual tutoring.			
17. Coordinate adult literacy programs as part of the public service mandate of the community college, urging that literacy responsibility be defined by statute at the state level.			
18. Require that all associate degree students complete a core curriculum that provides historical perspective, an understanding of our social institutions, knowledge of science and technology, and an appreciation of the visual and performing arts.			
19. Increase the impact of the core curriculum by presenting international perspectives in the curriculum, integrating the core into technical and career programs, and finding new ways to accomplish common learning goals for students enrolled in nondegree or part-time programs.			
20. Join with schools in 2+2 or 2+1 arrangements in which technical studies programs begun in high school are completed in a community college.			
21. Make experimental "inverted degree" models available in every state, through which specialized two-year programs would be followed by a general education sequence offered by a four-year institution.			
22. Insist that faculty close the gap between the so-called "liberal" and "useful" arts and that special attention be given to the selection of technical education faculty and administrators to assure that they can develop up-to-date programs that integrate the core curriculum and technical education.			
23. Insure the viability of the Associate of Applied Science Degree by giving attention to communication, computation, and problem-solving competencies in addition to technical education skills.			
24. Develop a clear agreement among faculty, students, and administrators on what portion of the core curriculum are to be included in technical education programs.			
25. Work with employers to develop a program of recurrent education to keep the workforce up-to-date and well-educated.			
26. Introduce all students to the concept of lifelong learning as part of the college orientation.			
27. Provide adult and continuing education programs that offer enrichment for citizens throughout their lives. Specifically, these programs need to draw upon the intellectual and cultural resources of the college; reflect both community college needs and the education traditions of the institution; and be coordinated with school, churches, and other groups to avoid unnecessary duplication.			
28. Emphasize civic literacy for adult continuing education programs by focusing on government, public policy, and contemporary issues.			

III. INSTRUCTION

Community colleges should...	Our college is: Exemplary	Adequate	Inadequate
29. Insist that good teaching is the hallmark of the community college movement, with students encouraged to be active, cooperative learners.			
30. Restrict class size in core curriculum and developmental courses; and encourage all faculty to teach core classes and continually strengthen the literacy skills of their students.			
31. Establish Distinguished Teaching Chairs or other appropriate recognitions for faculty who have demonstrated excellence in teaching.			
32. Promote the role of the faculty member as classroom researcher—focusing evaluation on instruction and making a clear connection between what the teacher teaches and how students learn.			
33. Develop a campus-wide plan for the use of computer technology in which educational and administrative applications are integrated.			
34. Develop incentive programs for faculty who wish to adapt educational technology to classroom needs.			
35. Establish a clearinghouse at AACJC to identify educational software of special value.			
36. Use technology to continue to extend the campus, providing instruction to the work-place, to schools, and to other community organizations.			
37. Explore new uses of technology to build a national network of community college educators who—through electronic networks, satellite classrooms and conferences—can transcend regionalism on consequential issues.			

IV. COLLEGE CAMPUS RECOMMENDATIONS

Community colleges should...	Our college is: Exemplary	Adequate	Inadequate
38. Build community beyond the classroom by strengthening the traditions of the college as a community of learning and making a full range of support services available to all students, even on weekends and evenings.			
39. Encourage counselors to work in close collaboration with faculty to build a learning community, with nonfaculty personnel also playing a strategic role in the building of community on campus.			
40. Insist that separation based on age, race, or ethnicity is not permitted and encourage collaboration between students with different backgrounds.			
41. Coordinate international activities—perhaps in a single office—using foreign students as campus resources for enriching student and faculty knowledge of other countries.			
42. Encourage student participation in community service programs and ask students who participate to write about their experiences.			

V. COMMUNITY PARTNERSHIP RECOMMENDATIONS

Community colleges should...	Our college is: Exemplary	Adequate	Inadequate
43. Organize school/college consortia, developing a plan for educational excellence, identifying at-risk youth in junior high school, providing enrichment programs that make it possible for such students to complete high school, and providing local high schools with information on the academic performance of their graduates who go to college.			
44. Strengthen the transfer function of the community college with more students urged to consider a baccalaureate degree program, and special commitment made to increasing transfer rates among Blacks and Hispanics.			
45. Insist on coherent two-year/four-year transfer arrangements in every state, including the coordination of academic calendars and common course numbering in general education sequences.			
46. Encourage decisionmakers to use community colleges as a major resource in promoting state or regional economic development.			
47. Establish regional clearinghouses to keep track of emerging workforce needs in areas served by the community colleges.			
48. Increase training partnerships and exchanges to provide continuing education opportunities for faculty and training/retraining for employers.			
49. Carefully integrate alliances with employers into existing community college programs and interests.			

VI. LEADERSHIP RECOMMENDATIONS

Community colleges should...	Our college is: Exemplary	Adequate	Inadequate
50. Develop strong presidential leaders who are able to inspire colleagues and convey a larger education vision.			
51. Collaborate with universities to prepare a new generation of community college presidents, with special effort given to increasing the number of women and minority leaders.			
52. See the president as the foremost advocate for teaching and learning at the colleges.			
53. Strengthen their governance by relying on a wide range of decision-making processes that include collective bargaining, faculty senates, effective committee structures, or other mechanisms.			
54. Make substantive leadership development experiences available for faculty and administrators at each community college, with faculty leaders encouraged to more actively participate in these processes.			
55. Refuse to confuse the role of the board of trustees with the role of internal governance; faculty, staff, and student representatives should not be appointed or elected to boards as voting members.			
56. Refuse to confuse the role of the board of trustees with the role of internal governance; faculty, staff, and student representatives should not be appointed or elected to boards as voting members.			
57. Assure that state funding formulas fully acknowledge the nature of services provided to part-time students and the level of support required to serve unprepared students.			
58. Urge corporations, private foundations, and philanthropies to remove policies that restrict or prohibit giving to community colleges.			
59. Encourage business and industry to help underwrite start-up costs of technical programs in emerging and fast-changing technologies.			

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VII. ASSESSMENT RECOMMENDATIONS

Community colleges should...	Our college is: Exemplary	Adequate	Inadequate
60. Stress classroom evaluation as the central assessment activity of the colleges.			
61. Develop a campus-wide assessment of institutional effectiveness with faculty and administrators involved in explicitly defining educational outcomes.			
62. Insist that college-wide assessment measure student competence in literacy, general education, and an area of specialization.			
63. Conduct periodic interviews or surveys of current students, graduates, and employers of graduates to help determine institutional effectiveness.			

COMMENTS:

Appendix C

Voluntary National Standards

Mathematics

To order *Curriculum and Evaluation Standards for School Mathematics*

The National Council of Teachers of Mathematics
Order Processing
1906 Association Drive
Reston, VA 22091

Item number: 398E1, ISBN 0-87353-273-2

Cost: $25 each (discounts for bulk orders)

Science

National Academy of Sciences
National Research Council
2101 Constitution Avenue, NW
Washington, DC 20418

Contact: Ken Hoffman

Completion: summer 1994

History

National Center for History in the Schools
at UCLA
231 Moore Hall, 405 Hilgard Avenue
Los Angeles, CA 90024

Contact: Charlotte Crabtree

Completion: spring 1994

Arts

Music Educators National Conference
1902 Association Drive
Reston, VA 22091

In coordination with the American Alliance for Theatre and Education, the National Art Education Association, and the National Dance Association

Contact: John Mahlmann

Completion: summer 1994

Civics

Center for Civic Education
5146 Douglas Fir Road
Calabasas, CA 91302

Contact: Charles Quigley

Completion: summer 1994

Geography

National Council of Geographic Education

In coordination with the Association of American Geographers, the National Geographic Society, and the American Geographical Society

Contact: Anthony de Souza
Geography Standards Project
1600 M Street, NW
Washington, DC 20036

Completion: winter 1993

English

The Center for the Study of Reading
174 Children's Research Center
51 Gerty Drive
Champaign, IL 61820

In coordination with the National Council of Teachers of English and the International Reading Association

Contact: Jean Osborn

Completion: fall 1995

ADVANCED HIGH PERFORMANCE MANUFACTURING

Occupational Area(s): *Technical Workers*

Description: This project assesses the core skills that technicians will require in the advanced high performance manufacturing environment. Advanced manufacturing implies the use of high-precision technologies integrated into a production process, turning a mass production system into one capable of producing variety and customization.

Status: Skill topics are now undergoing validation, with the results anticipated by April 30, 1995. The identification of the conditions and criteria for each of the skills will begin immediately thereafter, as will the development of an assessment and documentation system.

Contact: C.J. Shroll, Foundation for Industrial Modernization, 1331 Pennsylvania Avenue, N.W., Suite 1410, North Tower, Washington, D.C. 20004-1703. Telephone: 202/662-8968

AGRICULTURAL BIOTECHNOLOGY

Occupational Area(s): *Agricultural Biotechnology Technician*

Description: Agricultural biotechnology technician is an emerging occupation - one that is expected to have tremendous growth potential over the next decade and beyond. Technicians are employed in a variety of settings (laboratories, greenhouses, or farms) but use a common set of skills.

Status: Standards were developed and validated by August 1994 and are being widely disseminated. The current phase of the project is focusing on the production of instructional and informational materials to assist teachers and educators in implementing the standards. These materials will include an implementation guide, a sample curriculum, educational resources, audio/visual and print information on the industry, and career information. This work is scheduled for completion by June 1996.

Contact: Jeff Moss, National FFA, Project Director, 116 Sheringham, Normal, IL 61761. Telephone: 309/862-3838.

AIR-CONDITIONING, HEATING AND REFRIGERATION

Occupational Area(s): *Air-conditioning, heating, and refrigeration technicians in residential and commercial environments*

Description: There are approximately 400,000 air-conditioning, heating, and refrigeration technicians in the United States who will benefit from the work of this project.

Status: To date, this project has developed standards of performance and procedural steps for each identified task comprising the technicians' work. Academic and workplace skills required for successful job performance have also been identified. Currently, efforts are focused on the development of assessment items for each of the tasks. Future plans include the development and field testing of a prototype certification process.

Contact: Victor Harville, V-TECS, Southern Association of Colleges and Schools, 1866 Southern Lane, Decatur, Georgia 30033-4097. Telephone: 800/248-7701

AUTOMOBILE, AUTOBODY, AND MEDIUM/HEAVY TRUCK

Occupational Area(s): *Entry level automobile, autobody, and medium/heavy truck technicians*

Description: National committees representing the industry were convened to review and update Automotive Service Excellence (ASE) program standards, task lists, tools and equipment lists, program hour requirements, and instructor qualifications for each area.

Status: Standards have been completed for the automobile, autobody, and medium/heavy truck training programs. Applied academics and workplace skills for automobile technicians have been completed and research of the same for autobody and truck technicians is being synthesized.

Contact: Pat Lundquist, NATEF, 13505 Dulles Technology Drive, Herndon, Virginia 22071-3415. Telephone 703/793-0100

VOLUNTARY SKILL STANDARDS
Pilot Projects Update

BIOSCIENCE

Occupational Area(s): *Beginning level bioscience technical specialists (Standards for entry level specialists cover twenty related occupations.*

Description: These specialists are employed in research and development, clinical and diagnostic work, and manufacturing for clinical laboratories and pharmaceutical and biotechnology companies.

Status: The publication date for the standards is April 30, 1995. Each standard is centered on a real-life work scenario, which includes a problem, or "breakdown" to be solved. Each standards also includes the tasks, knowledge, skills, and behavioral attributes required for mastery. Also included are performance criteria, assessment methods, certification processes, and a description of implementation efforts. An education and training directory will be published in May 1995. A resource book of recommendations for program and system development will be available in September 1995.

Contact: Judith Leff, Education Development Center, 55 Chapel Street, Newton, Massachusetts 02158. Telephone: 617/969-7100 ext. 2373

CHEMICAL PROCESS INDUSTRIES

Occupational Area(s): *Entry level chemical laboratory technicians and process technical operators*

Description: The chemical process industries (CPI) covers the wide range of industry categories that use chemistry in value-added manufacturing processes. CPI technical workers are employed within industries covered by 91 SIC codes, by government laboratories, electronics companies, and automobile manufacturers.

Status: Phase I of the project concluded with the publication of the standards in January 1995. Phase II will include, among other activities, expanding the standards to benefit educators and establishing teacher qualifications and continuing education requirements.

Contact: Kenneth Chapman, American Chemical Society, 1155 Sixteenth Street, N.W., Washington, D.C. 20036. Telephone: 202/872-8734

COMPUTER AIDED DRAFTING AND DESIGN

Occupational Area(s): *Computer Aided Drafting and Design (CADD) users across all industries*

Description: CADD encompasses several different disciplines including mechanical, electrical, electronic, mapping, architecture, construction, and engineering.

Status: The CADD standards were published in the Spring of 1994. The project's efforts are now focused on the development of a knowledge and skills assessment. A draft of the examination should be available in late April 1995. The pilot test of the examination will be conducted during July and August in both rural and urban schools (public, private, secondary and post-secondary) and within industry locations.

Contact: John Morrison, Foundation for Industrial Modernization, 1331 Pennsylvania Avenue, N.W., Suite 1410, North Tower, Washington, D.C. 20004-1703. Telephone: 202/662-8905

ELECTRICAL CONSTRUCTION

Occupational Area(s): *Electrical Construction Worker, Electrical Line Construction Worker, and Electrical Residential Construction Worker*

Description: The electrical worker is defined broadly to include the performance of all tasks necessary to install electrical systems, relying on complete training and understanding of entire systems rather than partial training in limited disciplines. The standards will reflect this demand for comprehensive skills.

Status: After a review of written materials, personal observation, interviews, and thousands of surveys, a national job analysis study was completed and is serving as the basis for the draft standards. Final standards should be available in the summer of 1995.

Contact: Charles Kelly, National Electrical Contractors Association, 3 Bethesda Metro Center, Suite 1100, Bethesda, Maryland 20814-5372. Telephone: 301/657-3310

ELECTRONICS

Occupational Area(s): *Manufacturing Specialist, Administrative/Information Services Support, Pre/Post Sales*

Description: The objective of this project is to develop standards for skills required by large numbers of workers in the electronics manufacturing industry. It was originally intended to develop standards for Manufacturing Specialist, Pre/post Sales Analyst, and Administrative/Information Support Personnel.

Status: Standards were issued in February 1994 for the original three occupational areas. These standards have been fully validated across the entire industry. Work is underway to develop standards for Manufacturing Specialist Team Leader, a newly identified occupation, and to release the underlying knowledge and skills necessary to achieve the standards. The project is also starting to implement the skill standards at industry and education beta test sites and is currently developing an assessment system for skill standards in the workplace. Several new publications will be released this Spring and early Summer, including standards for Manufacturing Specialist Team Leader and results of our national validation study.

Contact: Cheryl Fields Tyler, American Electronics Association, 5201 Great American Parkway, Box 54990, Santa Clara, California 95056. Telephone: 408/987-4289

ELECTRONICS

Occupational Area(s): *Entry level electronics technicians (covers those employed within basic and applied research, product development, manufacturing, marketing, maintenance, and repair of electronic components, devices and systems)*

Description: The industry covered by this project includes general electronics, avionics, business machine service, consumer products, biomedicine, microcomputer systems, industrial electronics, instrumentation, telecommunications, and automotive service.

Status: Standards were published in June 1994 and the development of detailed measurement criteria is expected to be completed during the summer of 1995. Considerable efforts are also being directed at the development of a certification process.

Contact: Irwin Kaplan, Electronic Industries Foundation, 919 18th Street, N.W., Suite 900, Washington, D.C. 20006. Telephone: 202/955-5810

GROCERY

Occupational Area(s): *Customer Service/Stock Associate and Front-end Associate (encompass all entry level positions)*

Description: The grocery industry is comprised of national self-distributing and non-self-distributing chain stores and independently owned wholesale companies. The food marketing industry consists of approximately 1.5 million establishments that employ 12 million people.

Status: Currently, the project is distributing a survey nationwide to share the results of the research conducted to date and to glean further information and validation on the two occupational areas.

Contact: Jim Williams, National Grocers Association, 1825 Samuel Morse Drive; Reston, Virginia 22090. Telephone: 703/437-5300

HAZARDOUS MATERIALS MANAGEMENT TECHNOLOGY

Occupational Area(s): *Entry Level Hazardous Materials Management Technician (encompasses several job titles)*

Description: Hazardous materials management technology falls under the more general category of environmental science. It involves containment, clean-up, remediation, storage, transportation, and disposal of chemical, biological, and nuclear hazardous materials.

Status: Standards were published in January 1995 and the work of the project is now focused on the development of curriculum, assessment, and certification systems.

Contact: Jim Johnson, Center for Occupational Research and Development, 601 Lake Air Drive, Waco, Texas 76710. Telephone: 817/772-8756

HEALTH CARE

Occupational Area(s): *Health care core (applying to all workers in health services) and four occupational clusters: therapeutic; diagnostic; information services; and environmental services.*

Description: There are currently over 250 health care occupations, which are constantly changing and a number of those occupations already have standards developed by professional organizations and others. Therefore, standards were developed for major categories of occupations and functions.

Status: Standards have been issued and the project is now working on an implementation study conducted at 12 different sites. Each site is testing a specific application of the standards. Applications include curriculum development at the secondary and post-secondary levels, employee in-service training and professional development activities, and the creation of job competencies for a variety of purposes.

Contact: Dr. Sri Ananda, Far West Laboratories, 730 Harrison Street, San Francisco, CA 94107-1242. Telephone: 415/241-2712

HEAVY HIGHWAY/CONSTRUCTION & ENVIRONMENTAL REMEDIATION

Occupational Area(s): *Pipe laying work, concrete work, lead remediation, and petro-chemical remediation*

Description: This coalition is investigating the tasks performed by laborers in construction projects such as dams, airports, roads and highways, tunnels, and other major infrastructure facilities and structures.

Status: An in-depth occupational analysis has been performed and task list developed for each job area. Validation will occur in the Spring of 1995. Future plans include a correlation of the tasks from the multiple occupational areas to identify cross-functional skills throughout the industry. The project will also look for methods to improve communication between the worlds of work and education. Final standards should be available in June 1995.

Contact: John L. Tippie, Laborers-AGC Education and Training Fund, P.O. Box 37, 37 Deerfield Road, Pomfret Center, Connecticut 06259. Telephone: 203/974-0800

HOSPITALITY AND TOURISM

Occupational Area(s): *Front-line positions in hospitality and tourism industry. Four are from food service -- server, host, cashier, and busser, and four are from lodging -- front desk associates, reservationist, bellstand, and concierge.*

Description: This project is developing standards for new job titles that can eventually lead to managerial success in high performance workplaces. In the industry which employs over 10 million, approximately 5 million are employed in these eight positions.

Status: Standards are to be issued in April 1995. Efforts are now focused on establishing a framework for governance of a permanent structure to support its work and credentialing and assessment.

Contact: Doug Adair, Council on Hotel, Restaurant, and Institutional Education, 1200 17th Street, N.W., Washington, D.C. 20036-3097. Telephone 202/331-5990

HUMAN SERVICES

Occupational Area(s): *Entry level human service occupations (cluster includes: case managers, job coaches, and residential support staff)*

Description: The human service industry addresses the needs of many population groups who have distinctive physical, cognitive, emotional, social, and economic needs. This project is focusing on workers who provide direct help within a community setting to those with extraordinary support needs. The project will promote the integration of the voluntary standards with existing education, training, and certification efforts.

Status: The coalition has now completed draft standards and is in the midst of its validation process. Four demonstration sites have been identified to test the implementation of the standards in education and work-based settings.

Contact: Marianne Taylor, Human Services Research Institute, 2335 Massachusetts Avenue, Cambridge, Massachusetts, 02104. Telephone: 617/876-0426

INDUSTRIAL LAUNDRY

Occupational Area(s): *Production workers and Maintenance Technicians (These occupations include most of the non-degreed workers in the industry.)*

Description: The industrial laundry industry is a $3 billion service industry with most of its employees being low skilled and at the low end of the wage scale. In addition to defining standards, the work of the project includes development of a two-level certification process, structured on-the-job training, and a pre-employment selection guide.

Status: Standards for both occupations were published in February 1995. Certification processes have been developed and are currently being pilot tested. Written assessments and performance-based demonstrations have been prepared. Six program documents supporting the certification programs and 11 learning resource modules are being developed. Cooperative work with International Fabricate Institute will begin in mid-May, 1995 and a pre-employment selection guide, intended to help industry managers in the selection and hiring process, is ready for distribution. Also, the coalition is now engaged in widespread promotional efforts as well as expanding its work to include the retail drycleaning segment of the industry.

Contact: Geoffrey Northey, c/o Uniform and Textile Service Association, 1730 M Street, N.W., Suite 610, Washington, D.C. 20036. Telephone: 703/938-5057

METALWORKING

Occupational Area(s): *Machining, Industrial Equipment, Tooling and Metalforming Technicians*

Description: The project is utilizing a two-proned approach. One is industry-led, using technical work groups to set standards, curriculum and training guidelines, and an assessment system. The other is a state-led effort to implement the standards into education and workforce development programs and quality assurance systems, and establish an integrated credentialing system.

Status: Standards have been published for the Machining Skills cluster and work is in progress for the development of standards in the other areas. Work has also begun on developing assessment instruments with a validation effort scheduled for April 1995. A pilot implementation program is being conducted with standards being used to guide the training of new workers and for upgrading the skills of incumbent workers.

Contact: William Ruxton, Vice President, National Tooling and Machining Association, 9300 Livingston Road, Ft. Washington, Maryland 20744. Telephone: 301/248-6200

PHOTONICS

Occupational Area(s): *Photonics Technicians (cluster includes workers in the following specialties: Defense/Public Safety/Aerospace, Medicine, Computers, Communications, Manufacturing/Test and Analysis, and Environmental/ Energy/Transportation.*

Description: Photonics crosses a number of industries which rely on light-based technology. New and varied applications for photonics technology are appearing daily, offering opportunities for new jobs, confronting workers with a dynamic work environment, and challenging educators to stay abreast of evolving employer needs.

Status: Standards were released in March 1995 and have already been translated into knowledge components. Next steps include development of curriculum to support standards attainment, identifying certification issues and options, and building an infrastructure for on-going maintenance.

Contact: Darrell Hull, CORD, 601 Lake Air Drive, Waco, Texas 76710. Telephone: 817/772-8756

PRINTING

Occupational Area(s): *Prepress/Imaging, Press, and Binding/Finishing/Distributing*

Description: Draft standards have been developed at the expert level with the expectation that the standards will be adapted to fit the needs of students and 'others preparing for entry-level jobs and advancement along a career path.

Status: National validation of press skill standards has been completed and validation of the prepress/imaging standards began in March 1995. The Council of Great Lakes Governors, a prominent partner in the coalition, is identifying state programs and companies to pilot the standards, contributing to their broad acceptance, credibility and use. Work is continuing on the development of standards for the Binding/ Finishing/Distributing cluster. Additional next steps include developing prototype assessment measures for the press standards and planning for an organization that would carry out maintenance and dissemination of standards, certification of workers and accreditation of training programs.

Contact: Jack Simich, Graphic Arts Technical Foundation, 4615 Forbes Avenue, Pittsburgh, Pennsylvania 15213-3796. Telephone: 412/621-6941

RETAIL

Occupational Area(s): *Professional Sales Associate*

Description: The retail industry employs one in every five workers in the U.S. This project has focused on the development of skill standards for the Professional Sales Associate as a means to promote high performance work organization at the point where the greatest number of jobs and opportunity for driving profit exist.

Status: A standards framework was released in November 1994 and work has begun to integrate standards with state school-to-work initiatives. Research is underway to determine how best to use and promote standards throughout the retail community, including using them as a basis for training and certification. In addition, the project managers are working closely with two other pilot groups to develop common standards for customer service across their industries.

Contact: Rob Hall or Kathy Mannes, National Retail Federation, 325 Seventh Street, N.W., Suite 1000, Washington, D.C. 20004. Telephone: 202/783-7971

WELDING

Occupational Area(s): *Entry Level Welder (a semi-skilled, production worker requiring significant supervision)*

Description: Welding is embedded in a range of industries including steel, shipbuilding, aerospace, automobile, railroad, mining, and petrochemical. It is estimated that there are in excess of 600,000 welders in the United States.

Status: The standards, a training guide, and a video for entry level welders will be available the first week of April 1995. Efforts of the project will be completed with the dissemination of this information.

Contact: Nelson Wall, American Welding Society, 550 N.W. LeJeune Road, Miami, Florida 33126. Telephone: 305/443-9353

Appendix D

Electronic Online and Other Resources

Professionals have access to a broad range of databases and information through Electronic Library and NSU sources. Gopher through NSU indicated how to access Educational Testing Service, McGraw-Hill, National Center for Research in Vocational Education, the Learning Styles Network at St. John's University, and interface.

Four Human Resources Development Reports in ERIC Feature Exemplary Student Work in 1993-94

Enrollment in the South Florida Cluster yielded two sections, one of professionals taking their first PHE seminar and a second group of individuals beyond their first PHE seminar. A report was written about the HRD seminar which features the work of Greg Stiber, Dana Tesone, Pamela Shaffer, and Lindy Pickard (ED 371 164). Greg Stibers papers contain the goals of Nova Southeastern University and detailed information about typical growth patterns of strategic management development systems. The work by a student in the second group was included in a Tampa report.

ED 372 185 features the work of professionals in the Phoenix Cluster. They are Steven J. Tourville, James R. Frazier, Wayne G. Gautreau, and Karen E. Hoblit. The report contains "Restructuring Arizona's Universities" by the Center for the Study of Higher Education at the University of Arizona

ED 372 277 features the work of professionals in the Tampa Cluster. They are Pamala Bull LaGasse, Sherry L. Kersey, Shirley Waterhouse, and Margaret J. Dooley. Robert W. Hill was in the South Florida Cluster. His work is included in the Tampa report. His work includes an extensive HRD glossary.

ED 372 239 features the work of two professionals in the Orange County Cluster, Gail J. Palmisano and Arnold L. Kosmatka. Three papers and a practicum proposal by Gail Palmisano are featured in the report. The report contains information about Choosing the Future.

Exemplary student work prior to 1993-94 is available in ED 359 412, ED 351 499, and ED 335 519. None of the above-mentioned student work meets APA-PHE 1995 form and style.

Gopher Through Nova Southeastern University

mmunix
1 Internet Menu
2. Internet Tools (Hytelnet, Archie, Gopher, Inter-Links)
3. Gopher/
2. University of Michigan/
8. gophers/
4. United States/

7. California
72. NASA Internet Initiative (Quest)/

9. Connecticut

10. Delaware

22. Maryland

32. New Jersey
5. Educational Testing Service/
6. GTI GloablNet/
8. Institute for Advanced Study, School of Mathematics/
10. McGraw-Hill Gopher/
19. Rowan College of New Jersey/
24. Thomas Edison State College/
25. Trenton State College/
26. University of Medicine and Denestry of New Jersey/

34. New York
72. St. Johns University, Jamaica, NY/
91. Syracuse University CWIS/

40. Pennsylvania
6. CHESCO NET/
(Access to National Center for Research in Voc. Ed.)
35. Montgomery County Intermediate Unit Gopher Server/
1. About Montgomery County Intermediate Unit
2. More information about the MCIU, IUs and Districts/
3. Calendar of upcoming Events, workshops, conferences, etc/
4. MCIU Online Resource Center/
5. MCIU Projects/
6. Interface: MCIU Education Technology Newsletter/
7. Libraries/ Research on the Internet/
8. Selected Resources for Educational Administrators/
9. Selected K-12 Educational Resources by Subject/
10. Areas of General Interest/
11. Gopher Servers Worldwide by Geographic Location/
12. Searching the Internet (Veronica, Archie, Jughead)/
13. WAIS-based Information Searching/

interface

interface is published eight times a year by the Montgomery County Intermediate Unit Users/Trainers Group.

Holly M. Jobe, Editor

Lisa M. Roberts, Microcomputer Specialist

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Send any submissions on Apple, IBM or Macintosh disks or via electronic mail.

The mission statement of the Montgomery Copunty Intermediate Unit Instructional Material Services is:

• to be an educational technology center for Montgomery County schools which provides cost effective and timely services/resources to teachers, administrators, and ultimately students to improve instruction

• to provide proactive leadership in the exploration of new educational technologies

EDITORIAL

THE GLOBAL TEENAGER

Holly M. Jobe
Editor

While I was trekking in the Himalayas of Nepal last fall, I was struck with how "Westernized" the sherpas and people I met along the way were. I had traveled half way around the world to escape our dominant culture; to experience another lifestyle but was faced with sherpas in blue jeans and stylish running clothes. I had hiked for twelve days high into the mountains only to find posters of Bruce Lee and Arnold Schwarzenegger in an inn with no electricity and minimal amenities. I was disillusioned and was personally experiencing the "Global Teenager" phenomena described by Peter Schwartz, in his book, *The Long View*.

Schwartz is a futurist who specializes in tracking demographic, technological, economic, political and environmental trends and develops possible future scenarios based on the trends. He predicts, barring plague or famine, that by the year 2001 there will be over 2 billion teenagers in the world. Like the baby boomers of the 1960s, he expects that they will have a major impact.

Already, young people around the world manifest a global culture which includes the ubiquitous walkman, sport clothes from Benetton, Ralph Lauren and Esprit, movies, music, and MTV. Technology is changing rapidly and is moving towards richer, easier communications devices such as faxes, electronic mail and soon broad-band-width videoconferencing networks. The costs of these technologies are decreasing and families from established middle classes in many third world and affluent countries will be able to purchase computers and high technology items like we purchase calculators today.

These tools will make it possible for teens to communicate with each other easily; perhaps, as Schwartz suggests, have an electronic "date" with someone half way around the world. He envisions a place that may be called the "video cafe" where youngsters could "meet" other like-minded teens. We already have the rudiments of this in FrEdMail and SCHLnet (in the Usenet section of the MCIU internet main menu). One of the newsgroups is "Kids Cafe" where students can electronically meet others from around world.

From what Schwartz and his colleagues suggest, this trend is inevitable. "These global teenagers will have a sense of identity with their generation: as blue jeans were the universal style of the sixties, the styles of Benetton, where colors change but patterns remain the same, suggest a cultural uniform." These youngsters will have a very high technological awareness (remember, these are the kids that we're asking to program our VCRs!) And, they will have a more global identification than their parents, they will embrace peers from other countries.

What implications do these "inevitable" trends have for education? Where do schools fit in? Can we help prepare *all* students, not just those privileged children of high tech, affluent parents. All students will need a head start in understanding and using the tools of the world?

The "Global Teenager" is real, even in the dusty, crowded, ancient city of Kathmandu. Close to the roof of the world, there is a United Colors of Benneton store. Since it is expected by some, that these estimated 2 billion young people will have more of an impact on the world than the post World War II baby boomers, they must be prepared to lead us into the 21st and 22nd centuries.

WORLD CONFERENCE COMPUTERS IN EDUCATION

International Convention Centre
Birmingham, UK

July 23-28, 1995

Contact WCCE '95
Margaret St., Birmingham BE EBW,
United Kingdom
Telephone: 44-21-428-1258
Fax: 44-21-428-2246

32. New Jersey

5. Educational Testing Services/
1. About this Gopher/
2. What's New on the ETS Gopher (updated 4/14/95)/
3. About ETS/
4. Quick Test Finder/
5. Tests and Services/
6. Computer Based Testing (CBT)/
7. The ETS Presidential Series/
8. Policy Information Center/
9. Employment Opportunities at ETS/
10. Other Educational Services/

34. New York
82. St. Johns University, Jamaica, NY/

1. About the SJU Internet Gopher
2. SJUinfo - St. John's U Campus-Wide Information System/
3. What's New on the SJU Gopher/
4. Search for a Subject in Gopher-space/
5. Disability and Rehabilitation Resources/
6. Education and Training Resources/
7. Groups and Organizations/
8. SJU Listserve Archives and Listserve Data Files/
9. Information by Discipline (Subject)
10. Network Information Services (Gopher/WAIS/WWW/etc)/
11. Network Info, Software, and Resources/
12. Software (CMS, ICP/IP, Kermit, IBM Link, etc.)/

6. Education and Training Resources/
1. Grants and Funding Information/
2. The Princeton Review (
3. FYI Elementary and Secondary Education Users FAQ/
4. Why we use the Internet/
5. Learning Styles Network (St. John's University)
6. Electronic Resources for Adult/Distance Education/
7. Mailing Lists for K-12 Educators (at CNIDR)/

5. Learning Styles Network (St. John's University)
1. Rita Dunn Answers Questions on Learning Styles/
2. Bibliography - Dunn & Dunn Model (Aug 94)(?)
3. Bibliography - Dunn & Dunn Model/
4. Learning Styles Network Newsletters/
5. Abstracts (June 93)(?)
6. Abstracts/
7. Papers and Articles/
8. Conferences and Transcripts/
9. Textbook Extracts/

6. CHESCOnet (Chester County Network in PA)

1. About CHESCOnet/
2. Business/
3. Education/
4. Local and General Information/
5. Government and Law/
6. Health and Medicine/
7. Internet/
8. Library Information/
9. Search CHESCOnet by keyword or topic (?)
10. Previous CHESCOnet Gopher (Temporary)/
11. About the change in this Gopher.

3. Education/
1. National Info/
2. Higher Education/
3. Subject Specific Information/
4. Bulletin Boards/
5. Information Resources for Education/
6. Information for Teachers/

2. Higher Education/
1. Colleges and Universities/
2. Higher Education Assistance Information/
3. Psychology/
4. The Chronicle of Higher Education/

1. Colleges and Universities/
1. CS/C&DB (Center for the Study of Communication and Databases/
2. Pennsylvania Higher Education Institutions/
3. SSHE (PA State System of Higher Education)/
4. Temple University?

3. SSHE (PA State System of Higher Education)/
1. Bloomsburg/
2. California/
3. Office of the Chancellor/
4. Cheyney/
5. Clarion/
6. East Stroudsburg/
7. Edinboro/
8. Indiana/
9. Internet Connections/
10. Internet Information/
11. Kutztown/
12. Lock Haven/
13. Mansfield/
14. Millersville
15. Other State System Information/
16. Shippensburg/
17. Slippery Rock/
18. West Chester/

Exemplary Student Work, 1993-94

South Florida Cluster - ED 371 164

1. Strategic Planning and the Role of Human Resource Development at Nova University - G. Stiber
2. The Development of a Plan to Design and Deliver Programs Based on Client Needs Assessment for the Center of Hospitality Management at Nova University - Dana V. Tesone
3. A Model for Faculty Development in Occupational Therapy - Pamela K. Shaffer
4. The Need for Teamwork Training for Faculty and Staff at the Postsecondary Level - L. Pickard

Phoenix Cluster - ED 372 185

1. CAE-LINK Training Operations Strategic Action Plan - Steven J. Tourville
2. Central Training Academy Human Resources Department Plan of Action - James R. Frazier
3. The Creation of Functional and Discipline Specific Remote Computer Labs for the Implementation of Computing and Information Technology Across the Curriculum at Chandler-Gilbert Community College - Wayne G. Gautreau
4. Action Plan Towards Development and Implementation of an Interactive, Multimedia Computer Program - Karen E. Hoblit

Tampa Cluster - ED 372 277

1. An Instructional Plan for Staff at Sarasota County Technical Institute on the Americans with Disabilities Act of 1990 - Pamela Bull LaGasse
2. Human Resources Development Plan for Hillsborough Community College - Sherry L. Kersey
3. Action Plan to Implement Technology Seminars at Embry-Riddle Aeronautical University - Shirley Waterhouse
4. Expanding the Technology Horizons at Florida Community Col at Jacksonville - Margaret Dooley
5. Five-Year Action Plan for Nova University's Programs for Higher Education (PHE) to Require Personal Computers - Robert W. Hill

Glossary: Human Resources Development - Robert Hill

Orange County Cluster - ED 372 239

1. Development of a Vision for Communications in a Total Quality Training Facility, Fleet Training Center, San Diego - Gail J. Palmisano
2. Development of a Video Training Model to Increase Reliability of Neonatal Instructor Grading at Crafton Hills College - Arnold L. Kosmatka

Appendix E

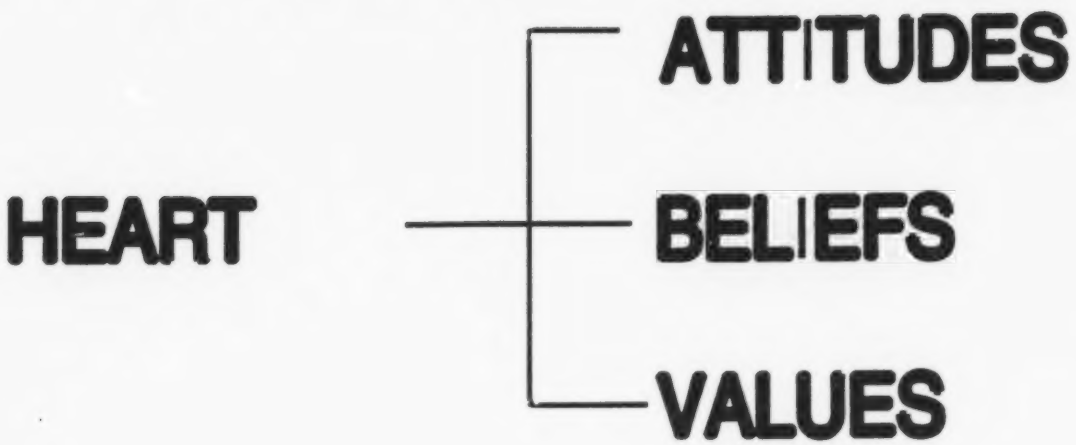
For the past decade I have taught 97 doctoral seminars in non-traditional programs at Nova Southeastern University. The Child and Youth Studies (CYS) Program is delivered in traditional and multitech (sessions online) formats. The second multitech cluster of professionals completed Leadership II in CYS last February. Professionals from Colorado and New Jersey co-created a vision and multi-year action plan for preschool readiness promotion in print format that will be converted to an online format. I have conducted seminar sessions online from Memphis since 1991.

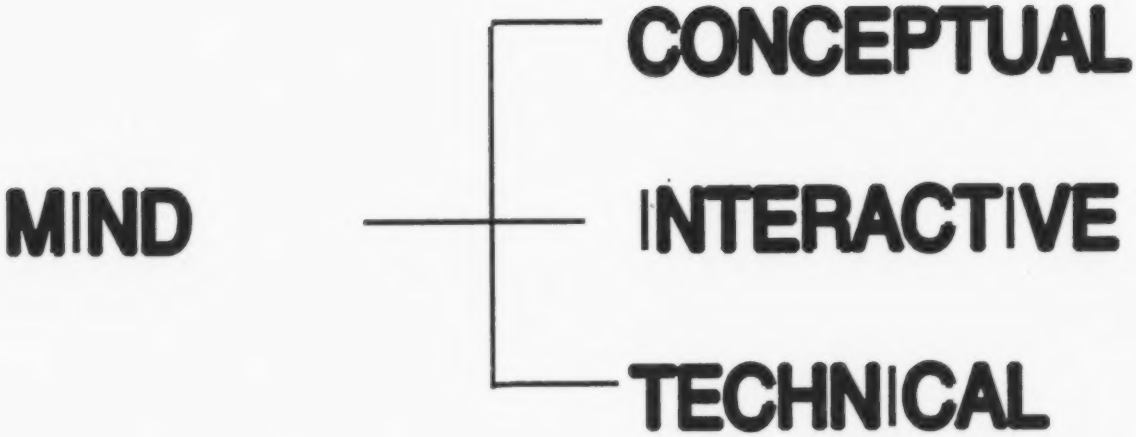
For the Programs for Higher Education (PHE), I taught Governance and Management and vocational, technical, and occupational education specialization seminars for nine years. I taught 27 sections of Governance and Management. I now teach Human Resources Development. I serve as a practicum evaluator, and advisor for major applied research projects. As a practicum evaluator for VTOE, HRD, and the Computer and Information Technology specialization, I have helped to mold ideas for over 350 professionals in several countries. As a MARP advisor, I help to co-create emerging paradigms and develop "Third Wave Transformational Leaders."

I was a keynote speaker in Taiwan in 1991, 1993, and 1994. I helped Dr. Niann-Chung Tsai create a strategic plan to convert a campus based traditional undergraduate program to a nontraditional format at the World College of Journalism and Communications; he is now the chair of the Department of Telecommunications. I helped Dr. Yng-chien Sheu create a Printing Technology Department (PTD) at National Taiwan Normal University (NTNU). The PTD has also become a support document to create six Asian-Pacific Centers that will be operational in two to three years. This is a wonderful opportunity for economic and human resources development. I am working with professionals in several other countries.

"**Sustaining Learning Communities in the Digital Era**" is an exciting project. Professionals working on anything from a paper through major applied research projects (MARPs) can collaborate in real time and electronically transmit their work to each other. Imagine completing a dissertation collaboratively online with culturally diverse professionals in foreign countries. One ecr session featured an advisee in the International Cluster who made extensive use of electronic library throughout his program. This project is taking on a life of its own. It will yield many insights about academic policy issues as well as procedures for improving quality through access to information and efficiency in degree completion. Imagine the growth from the HRD & technology intensive MARPs on the enclosed sheet.

NEW HABITS





LEARNING COMMUNITIES

THE MACRO ABCs

PEOPLE	EDUCATION-TRAINING	OUTCOMES
A. AGRICULTURAL ERA		
ELITE OTHERS	SCHOOLS & COLLEGES APPRENTICESHIPS	"PROFESSIONS" CRAFTSMEN
B. BUSINESS INDUSTRIAL ERA		
PRIVILEGED	ACADEMIC VOCATIONAL GENERAL	QUALITY
DISADVANTAGED	DROP OUT	INEQUALITY
C. COGNITION & COMMUNICATIONS		

ANY LOCATION A LEARNING ENVIRONMENT IN THE ADVANCED TECHNICAL ERA

RETHINKING, RESTRUCTURING, REVITALIZING

FROM POST - INDUSTRIAL ERA (PIE)

TO

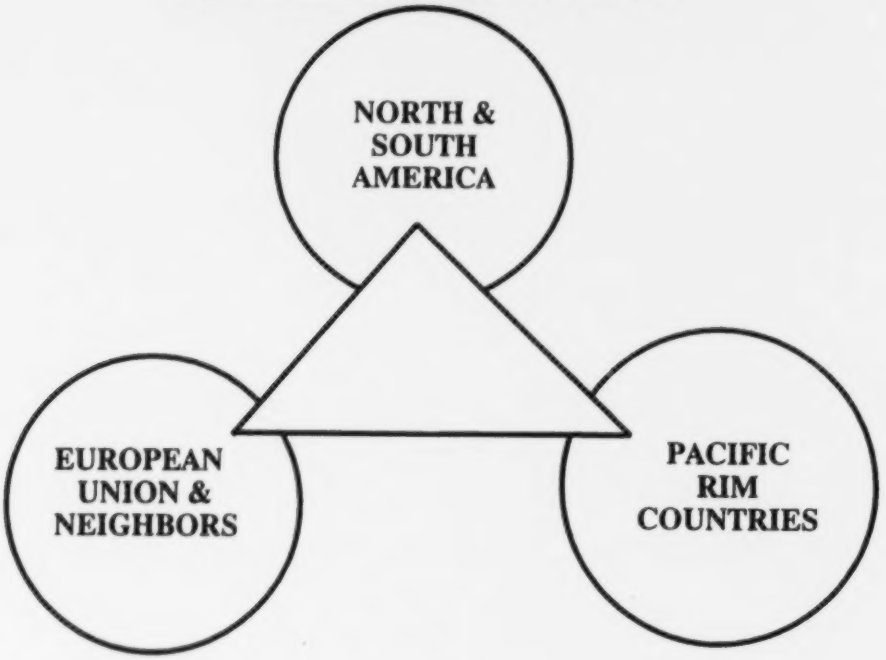
EARLY TECHNICAL ERA (ETE)

TO

ADVANCED TECHNICAL ERA (ATE)

1970s 1980s 1990s 2000s 2010s

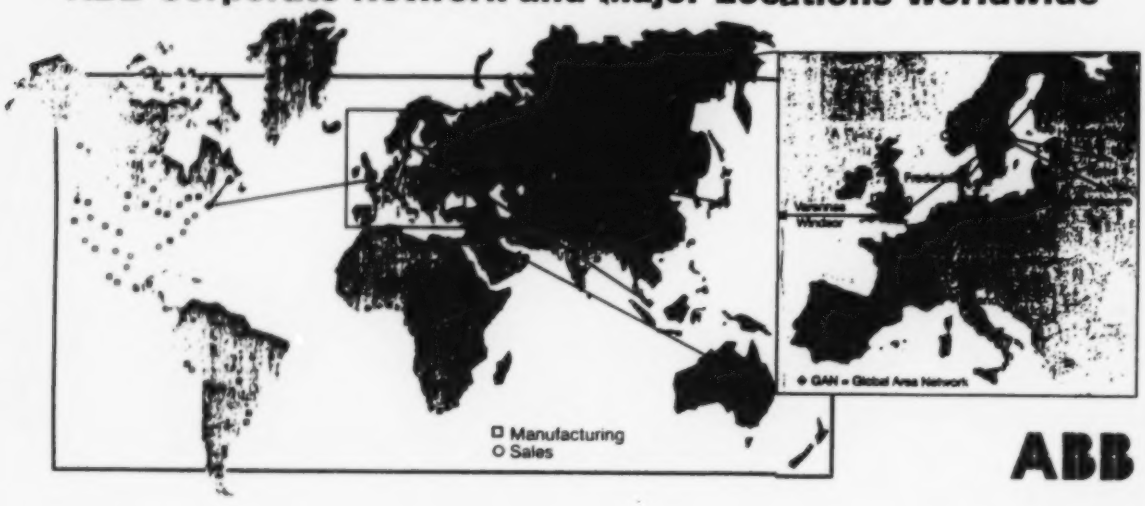
BETWEEN AND WITHIN



LEADERSHIP FOR A DEMOCRATIC SOCIETY

GLOBAL REGION	20TH CENTURY	21ST CENTURY
EUROPEAN UNION		
NORTH & SOUTH AMERICA		
PACIFIC RIM		

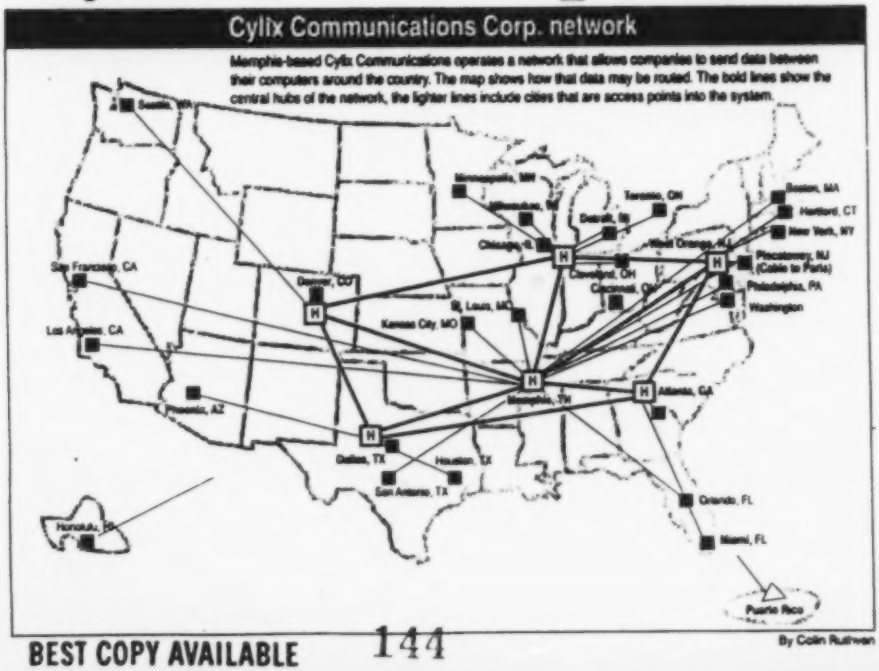
ABB Corporate Network and Major Locations Worldwide



ABB

WORKPLACE

Cylix raises its profile



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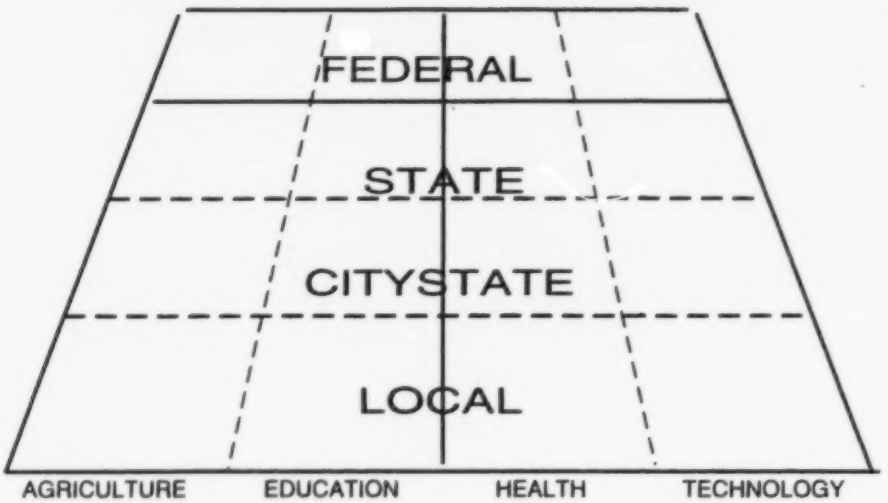
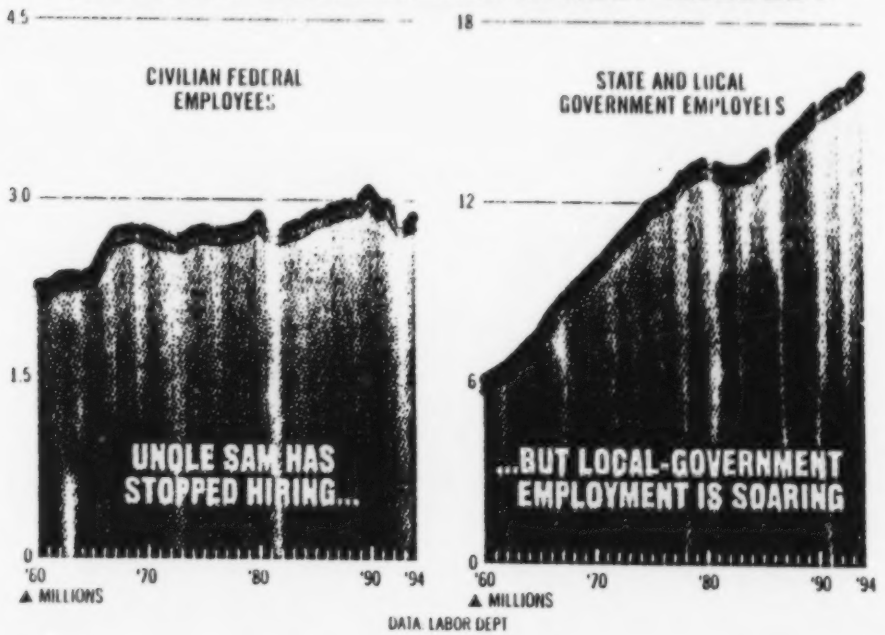
RESULTS ORIENTED GOVERNMENT POLICY & SERVICE DELIVERY

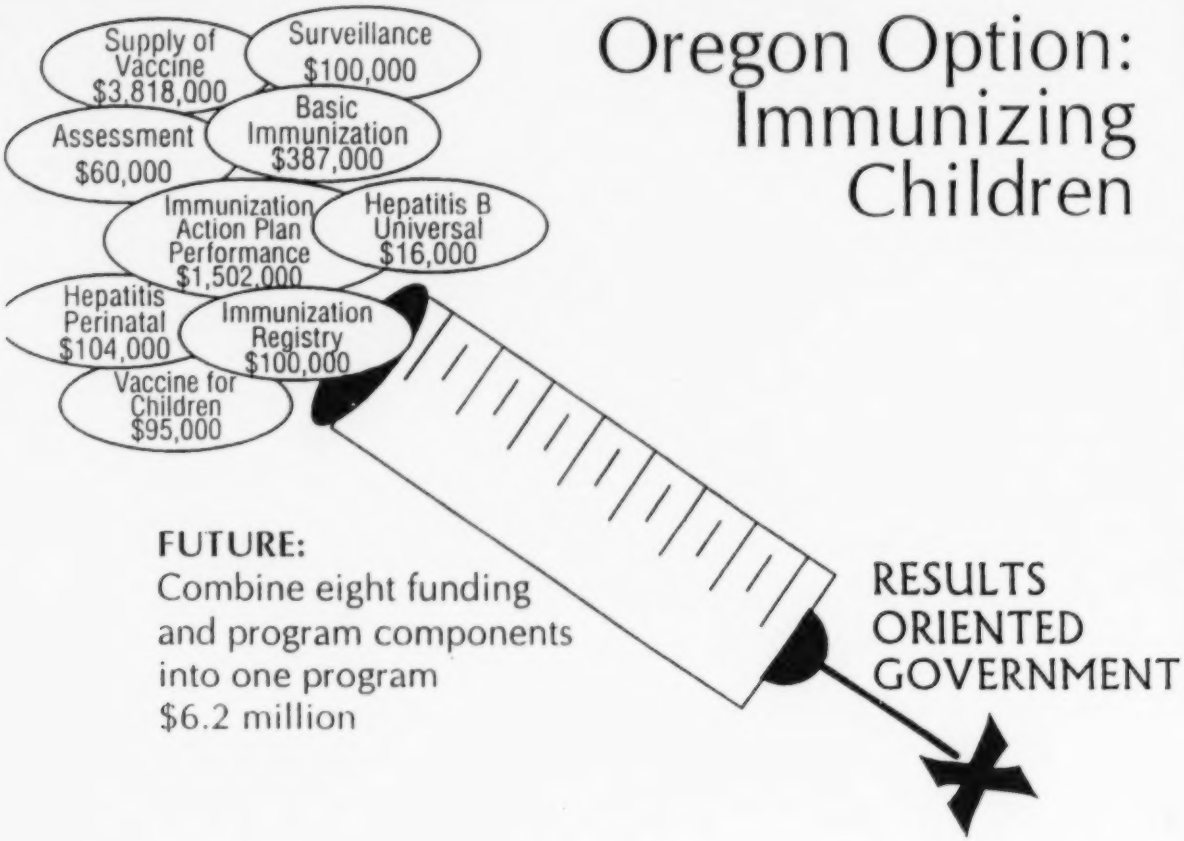


WHERE IS DOWNSIZING REALLY NEEDED?



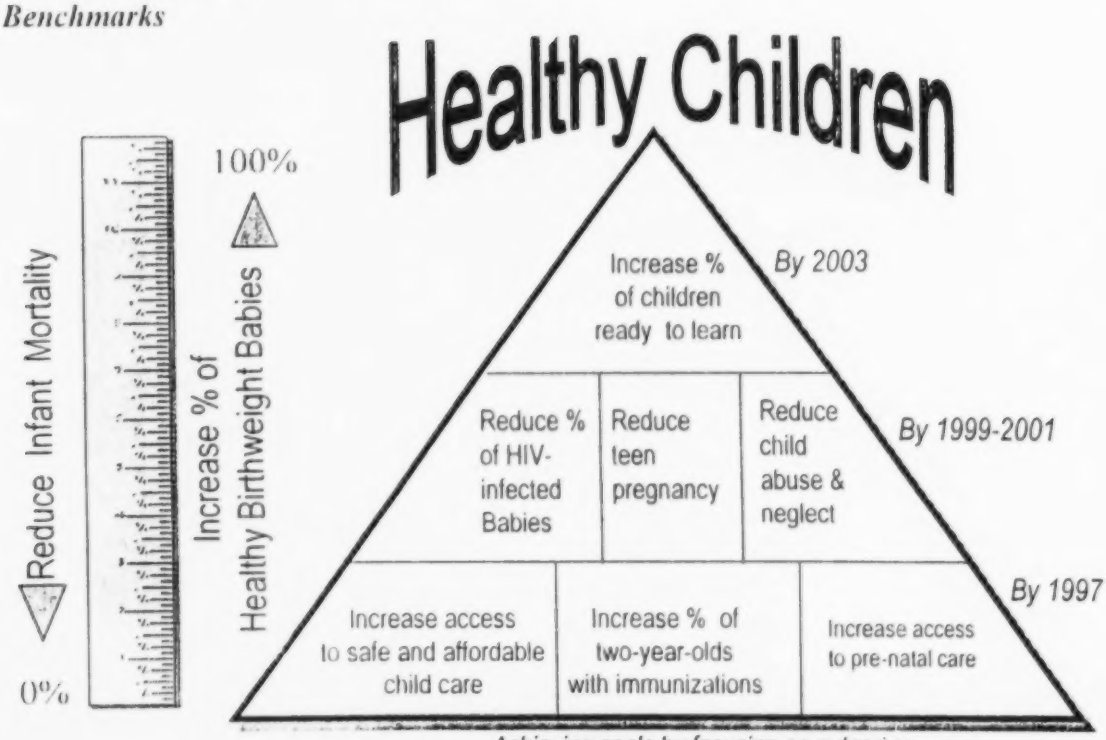
DATA: LABOR DEPT

Oregon Option: Immunizing Children



5/16/95

Oregon Option
Benchmarks



Achieving goals by focusing on outcomes

ENERGY
(ANTHRACITE COAL)

YEAR	TONS	EMPLOYEES
1870	14.0 M	35,600
1917	100.0 M	156,000
1992	4.8 M	2,500

Virginia Wiegand. "Remembering the Pride and Pain of PA Coal Mines." The Philadelphia Inquirer, August 7, 1994, p.B-1.

PRODUCTIVITY: MANUFACTURING VS. SERVICES

ESTABLISHMENTS	PERCENT OF ECONOMY	INCREASED PRODUCTIVITY 1980-1990	PRICE INCREASE
MANUFACTURING	20.0%	3.5%	3.1%
SERVICES	50.0%	0.2%	5.2%
	1980-1986	+0.6%	
	1986-1990	-0.5%	

Robert J. Samuelson. "A Shakeout in Services." Newsweek, Vol. CXVIII, No. 6, August 5, 1991, pp 64-65.

CREATING VISIONS

AND

ALTERNATIVE SCENARIOS

OPTION 1

Expansion

Steady State

Contraction

OPTION 2

Contemporary Traditional

Partial Technological

Technology Intensive

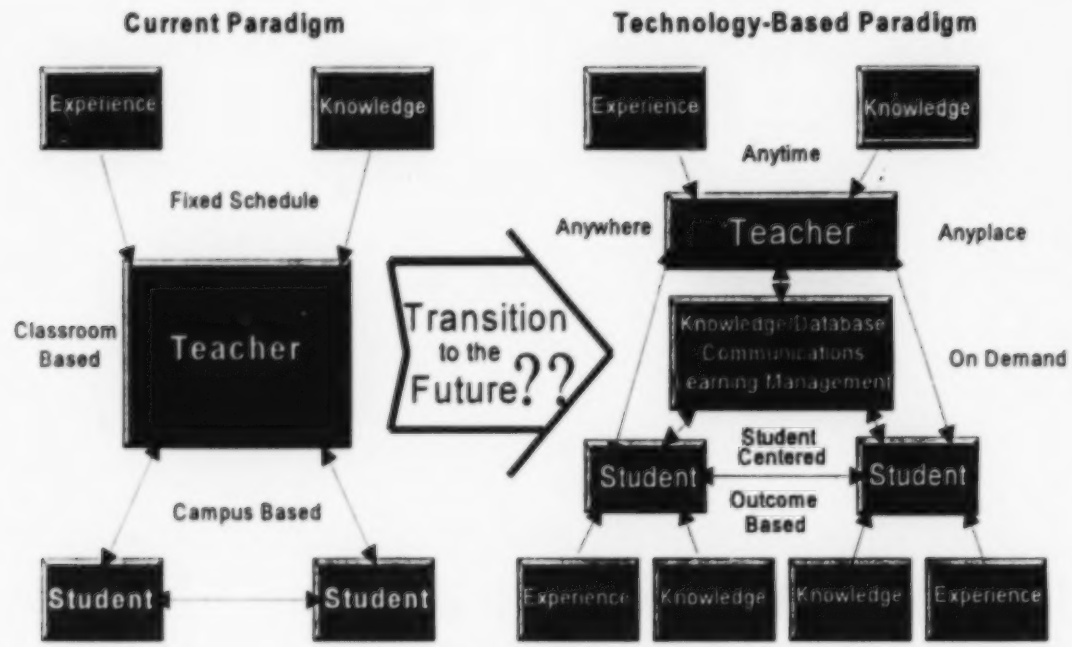
OPTION 3

Contemporary Traditional

Partial Technological - Technology Intensive

Cooperative Lifelong Learning

Solution Based Learning



CHANGING PARADIGMS

Overlock, T.H. (1995). Development of a multiyear plan for the integration of technology into the learning environment at Northern Maine Technical College. Fort Lauderdale, FL: Unpublished major applied research project, Nova Southeastern University.

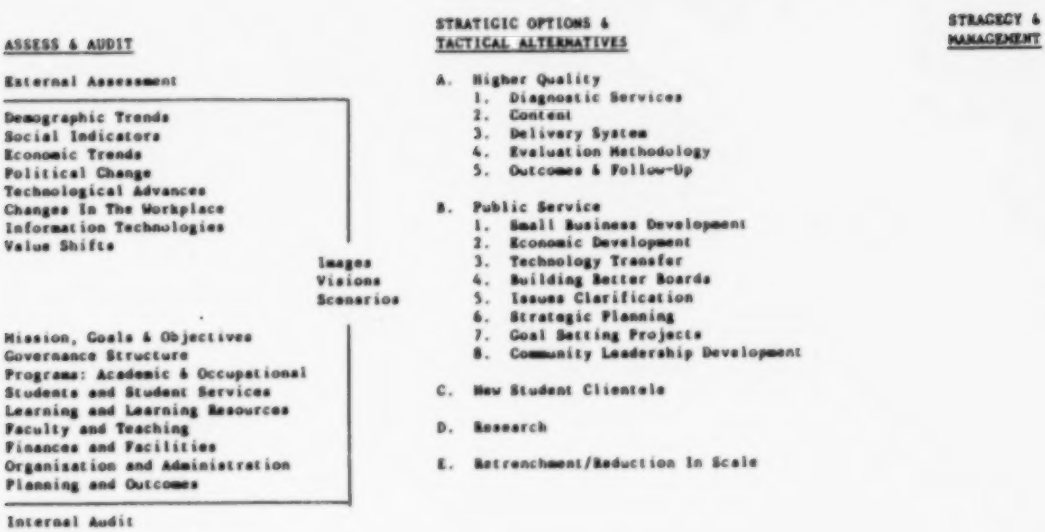
Note: Adapted from Branson, R.K. (April, 1990). Issues in the design of schooling: Changing the paradigm. Educational Technology, 30, 7-10

MULTI-YEAR PLAN

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5

FIGURE 7

STRATEGIC PLANNING AND MANAGEMENT



18

FIGURE 8

INSTITUTION _____ NAME _____

SWOT ANALYSIS

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.
4.	4.	4.	4.
5.	5.	5.	5.
6.	6.	6.	6.

STRENGTHS AND WEAKNESSES	OPPORTUNITIES AND THREATS	STRATEGIC OPTIONS	TACTICAL ALTERNATIVES
A = Academic C = Capital (Plant, Equipment) F = Financial M = Managerial, Organizational P = Personnel	D = Demographic E = Economic S = Social P = Political T = Technological	___ Higher Quality ___ New Stud. Clientele ___ Public Service ___ Research ___ Retrenchment 1 = High, 5 = Low	1. 2. 3. 4. 5.

19

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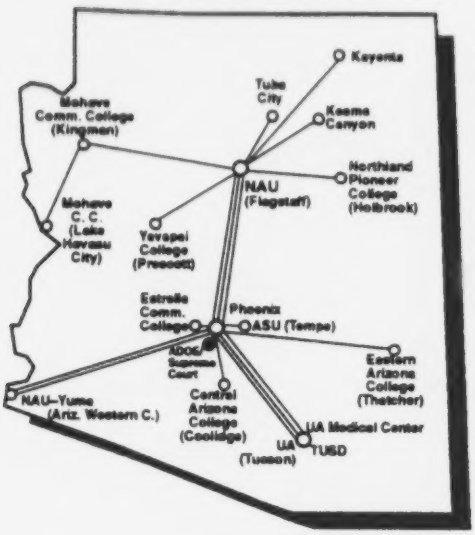
NAUNET AND NAULA

ACCESS THROUGH INFORMATION TECHNOLOGY

NAUNet Current/Planned System



1 NAUNet Telecommunications Network

NAUNet is a full duplex interactive microwave network. Multiple sites can interconnect with one another on the network. The first instructional sites in Flagstaff and at the NAU Center in Yuma, Arizona were completed in December 1989, followed by sites in Phoenix (ADoE/Supreme Court), Kingman (Mohave Community College), Tempe (ASU), Tucson (U of A), and Holbrook (Northland Pioneer College). Sites on the Navajo and Hopi Reservations go on-line in 1994 with the second year of support from the U.S. Dept. of Commerce's NTIA. Additional sites are planned for the following years. The system is fully interactive, and NAU plans to include T-1 data and telephony services on many circuits.

2 nauLA and the Satellite System

The Northern Arizona University Learning Alliance (nauLA) is a voluntary alliance of more than 100 satellite downlink, cable and wireless cable sites across Arizona for the delivery of statewide programs. Supporting nauLA is a C-band satellite transmission (uplink) system. The uplink, completed in 1990, has capability for transmission to areas that cover the contiguous 48 United States. NAU is also a founding member of IDEANET, a nationwide distance education alliance.

NAUNet Current/Planned & Proposed System Links

3 Interactive Television Classrooms and Control Rooms

Four interactive classrooms at NAU, two at NAU–Yuma, one at each of the other NAUNet sites, and sites at ASU, UA, and ADoE are fully operational for course delivery, and currently average 50 university credit courses of instruction each semester. Additional classrooms are under construction. The control rooms for each classroom are configured to be "user transparent." Operators using the control rooms may move from one to another with complete ease.

4 Television Master Control and Production/Postproduction Facilities

The on-campus center of the communications system is the broadcast quality television production studio and postproduction facility, and Master Control for NAUNet–Flagstaff, the campus-wide NAU cable television system, the "feed" to Warner Cable Channel 4 in Flagstaff, and a satellite reception facility that has Ku-Band and C-Band downlink (receive) antennas. The Phoenix hub for NAUNet is located at American Television Relay (MCI).

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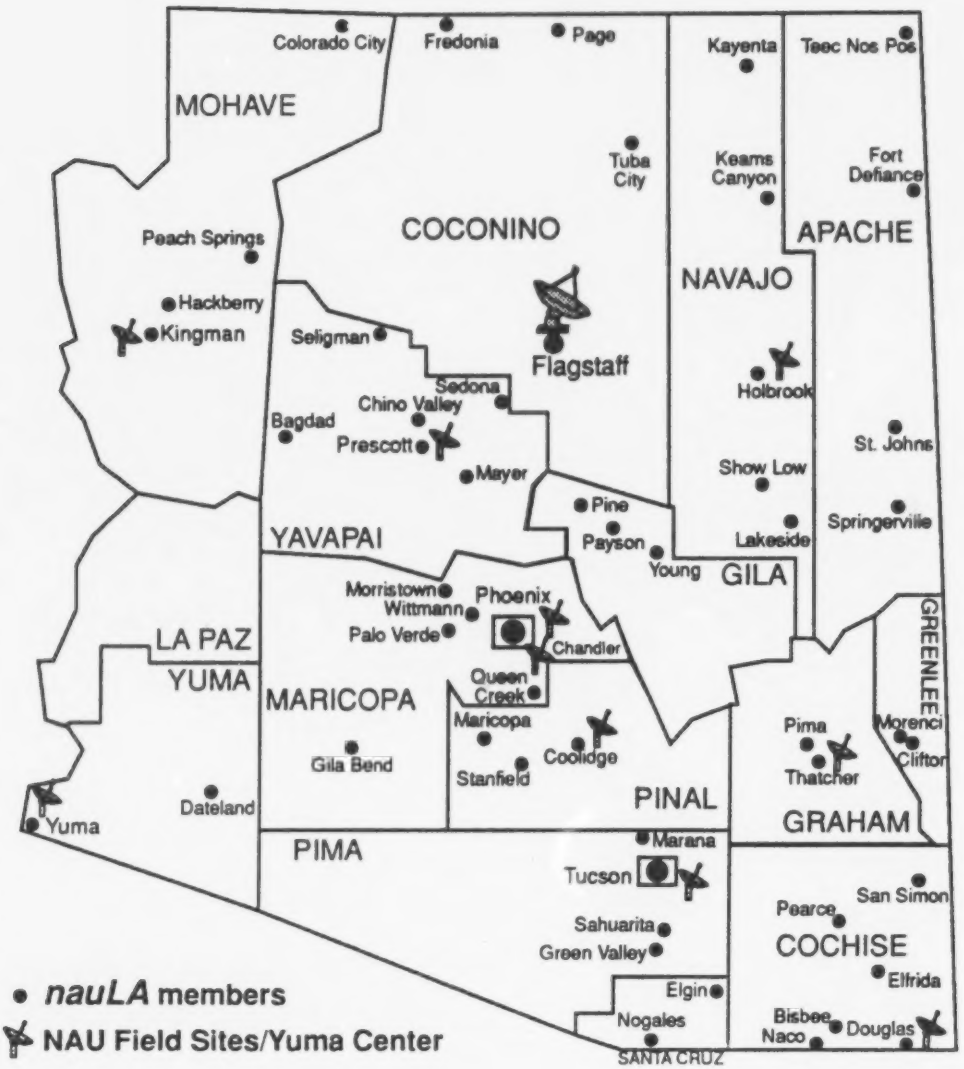
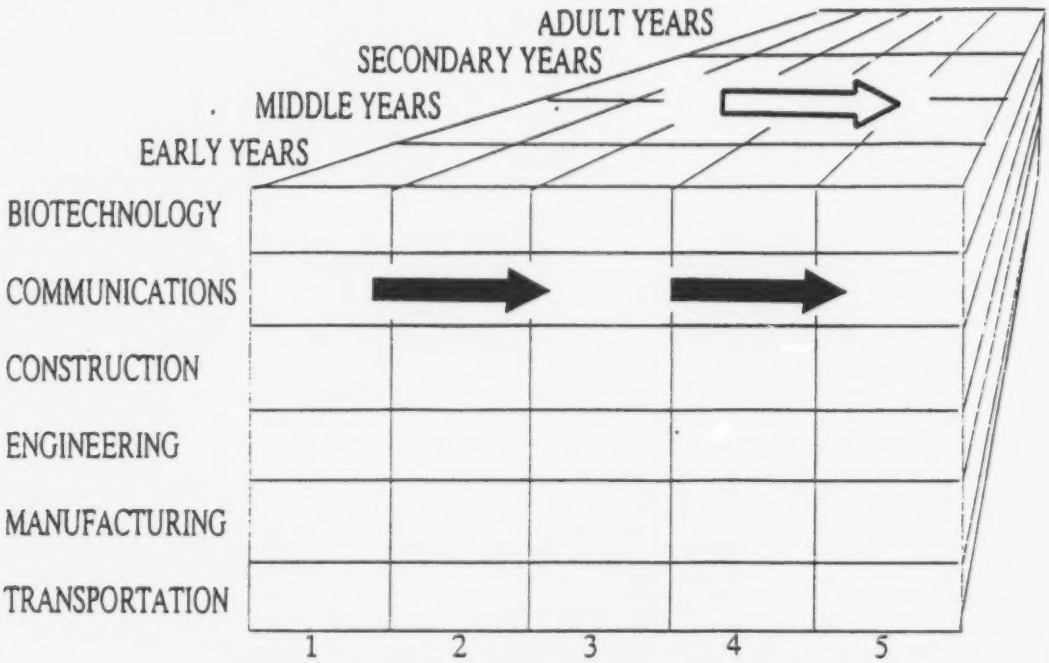
Northern Arizona University Field Sites
and
Northern Arizona University Learning Alliance (nauLA)
Member Locations

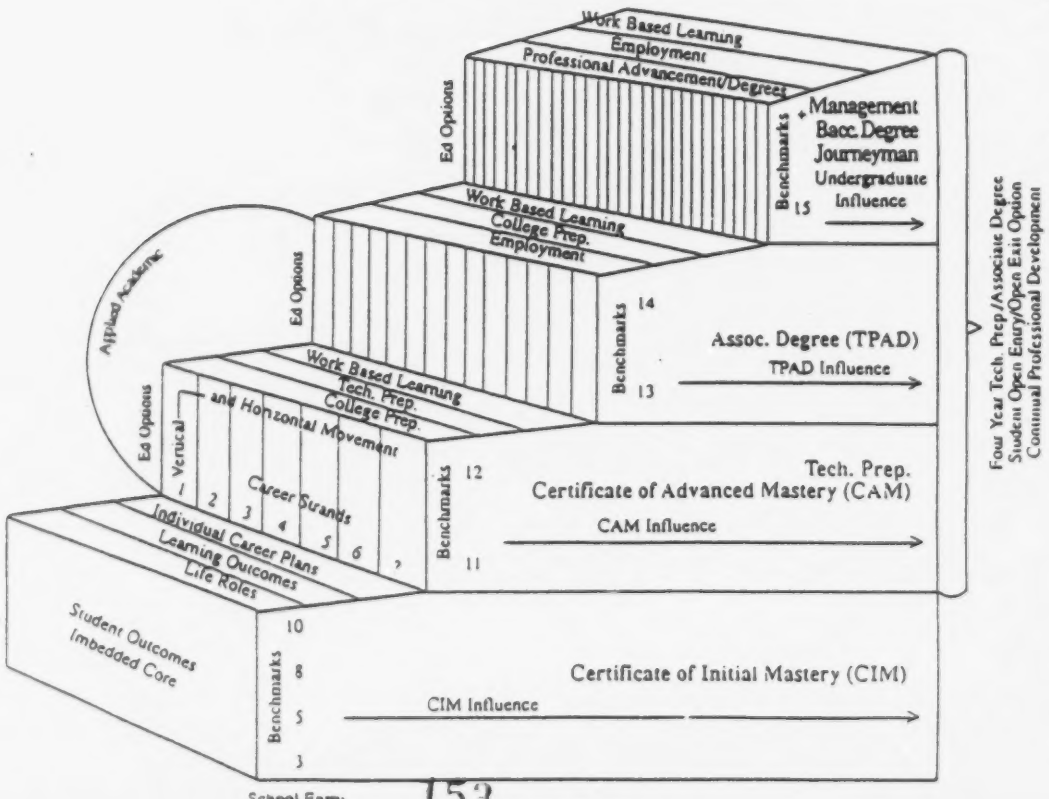


BORDERLESS & SEAMLESS SOLUTION BASED LEARNING



CONTINUOUS QUALITY IMPROVEMENT BENCHMARKS
TO PRODUCE HIGH PERFORMANCE LEARNER WORKERS

1/2/92



SHIFTS = POLICY IMPLICATIONS

From	*To*
education & training	skill formation
retraining	recurrent skill formation
on-the-job training	on-the-job learning
individual training	group and network learning
occupational skilling	career skilling
functional skilling	integrated skilling
narrow skilling	broad skilling
craft mysteries	shared learning
technical skilling	socio-technical skilling
competence	performance
learning leave	learning time
lean organizations	skill reserves
skill demarcations	skill integration
skill profiles	skill dynamics
occupational structures	career dynamics
division of labor	balance of skills
labor markets	skill markets

G.W. Ford. Rethinking Skilling for a Restructured Workplace
Commission for the Future, 1990

NEW DIRECTIONS IN EDUCATION

- Education planning will be done by skill rather than by job;
- Instruction will be provided in modules rather than in courses;
- Courseware development will be automated via expert systems;
- Testing will be embedded and continuous rather than being an explicit event;
- Modules will be multisensory, accommodating various learning styles;
- Networks will provide access to worldwide libraries of instructional modules rather than limiting an employee to local catalogs;
- Education will be truly distributed rather than under the central control of someone other than the learner; and
- Employees can initiate necessary education experiences themselves.

Sylvia Charp. "Editorial." THE TECHNICAL HORIZONS
Vol. 21, No. 8, March 1994, p. 8.

ED 298 977

FIGURE 4

KOLB LEARNING STYLE

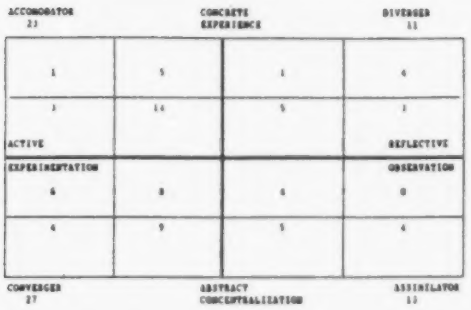


FIGURE 5

MYERS BRIGGS PLANNING STYLE

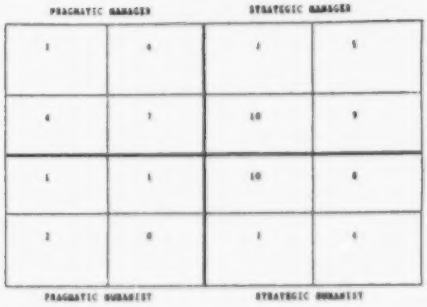


FIGURE 6

LEARNING STYLE & PLANNING STYLE

	PRAGMATIC MANAGER	STRATEGIC MANAGER	PRAGMATIC HUMANIST	STRATEGIC HUMANIST	TOTALS
DIVERGER	1		1	9	11
ACCOMODATOR	8	7	2	6	23
CONVERGER	7	12	1	7	27
ASSIMILATOR	2	8		3	13
TOTALS	18	27	4	25	74

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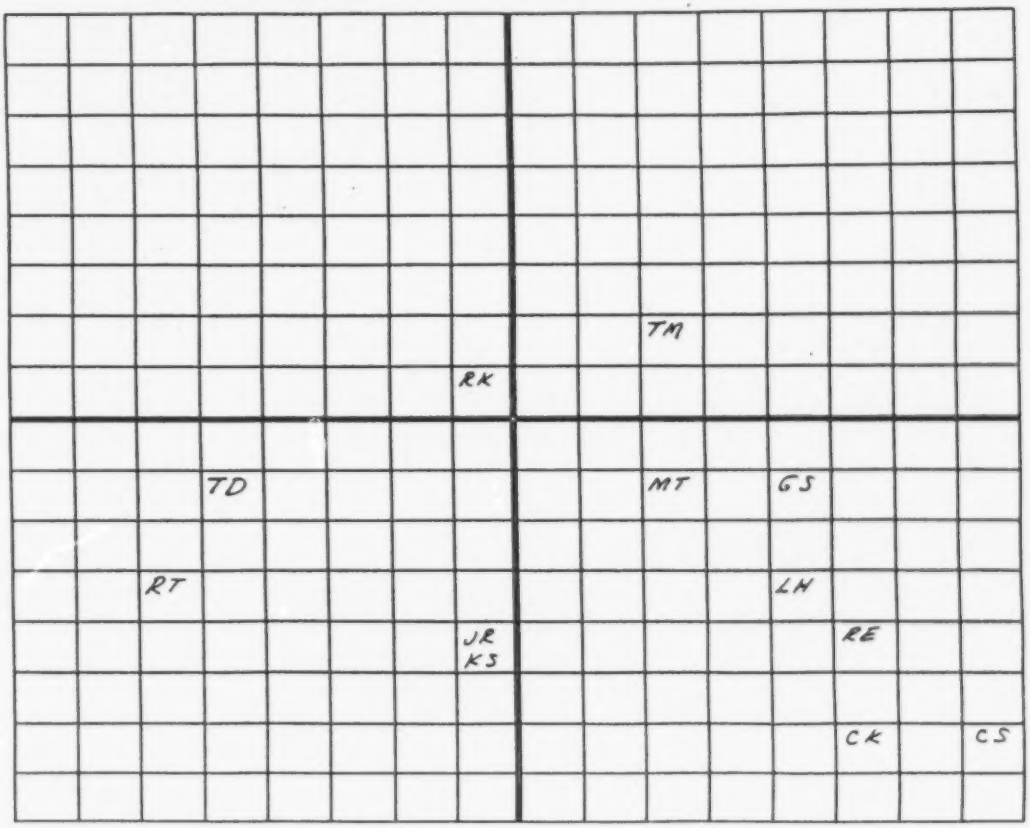
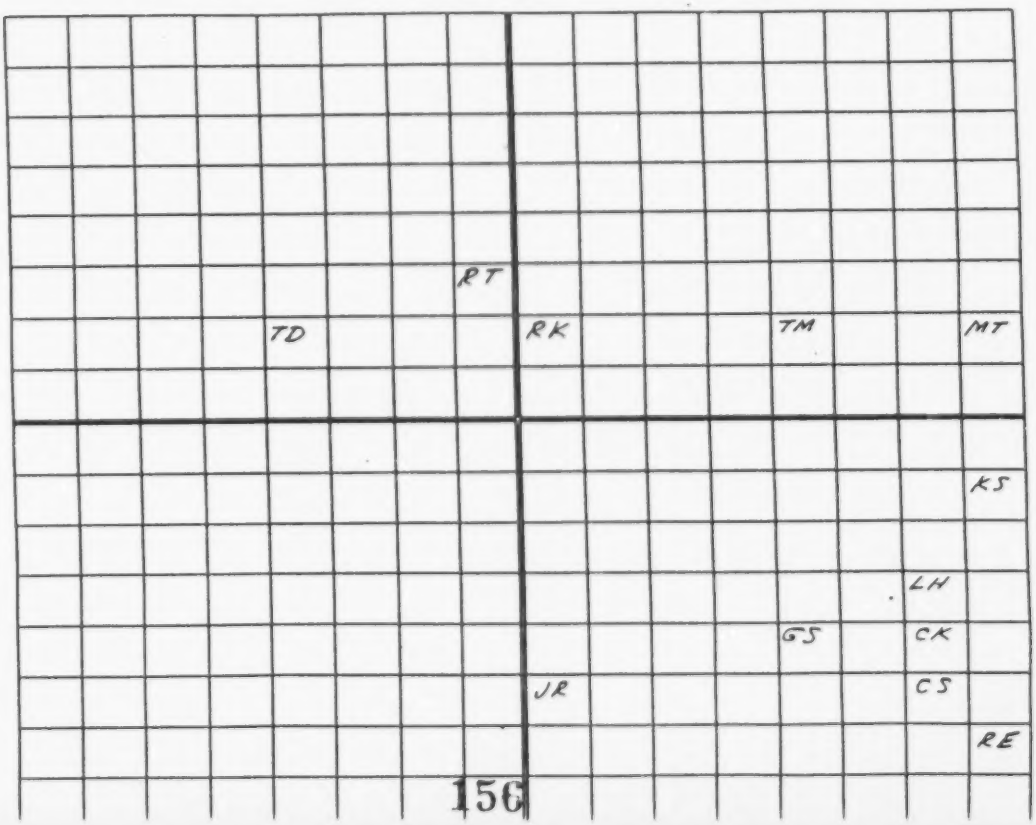
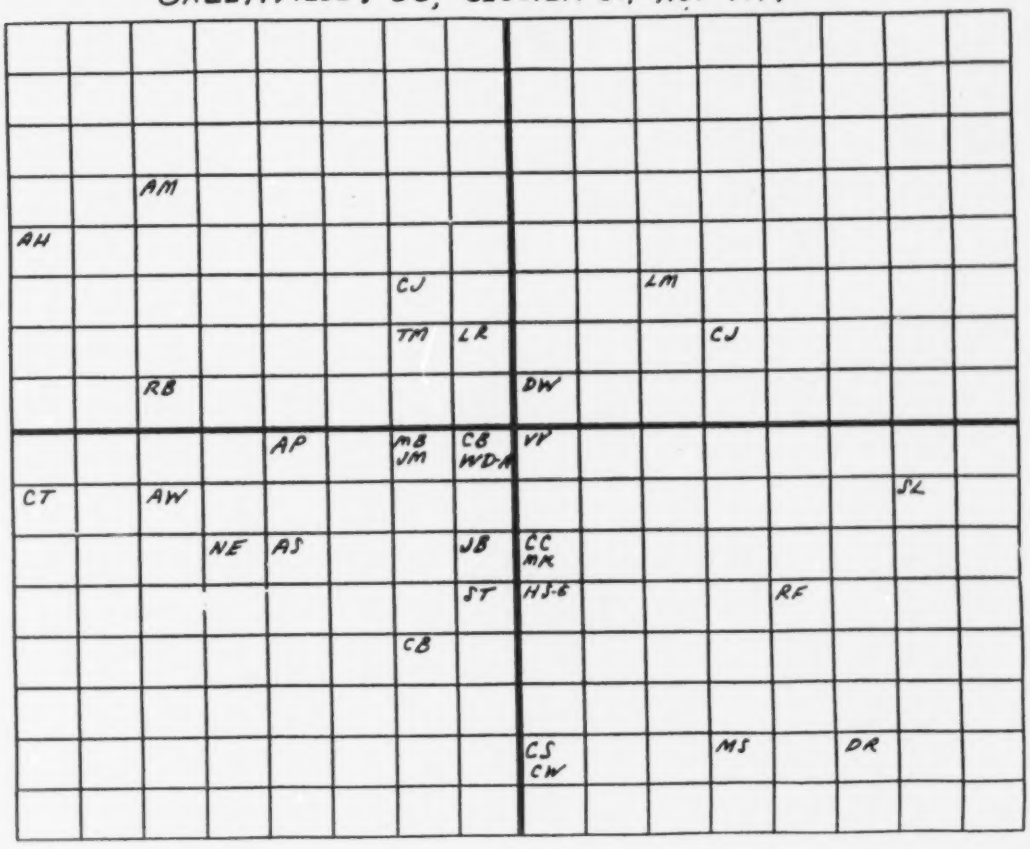
NATIONAL CLUSTER #50, FEB 1992



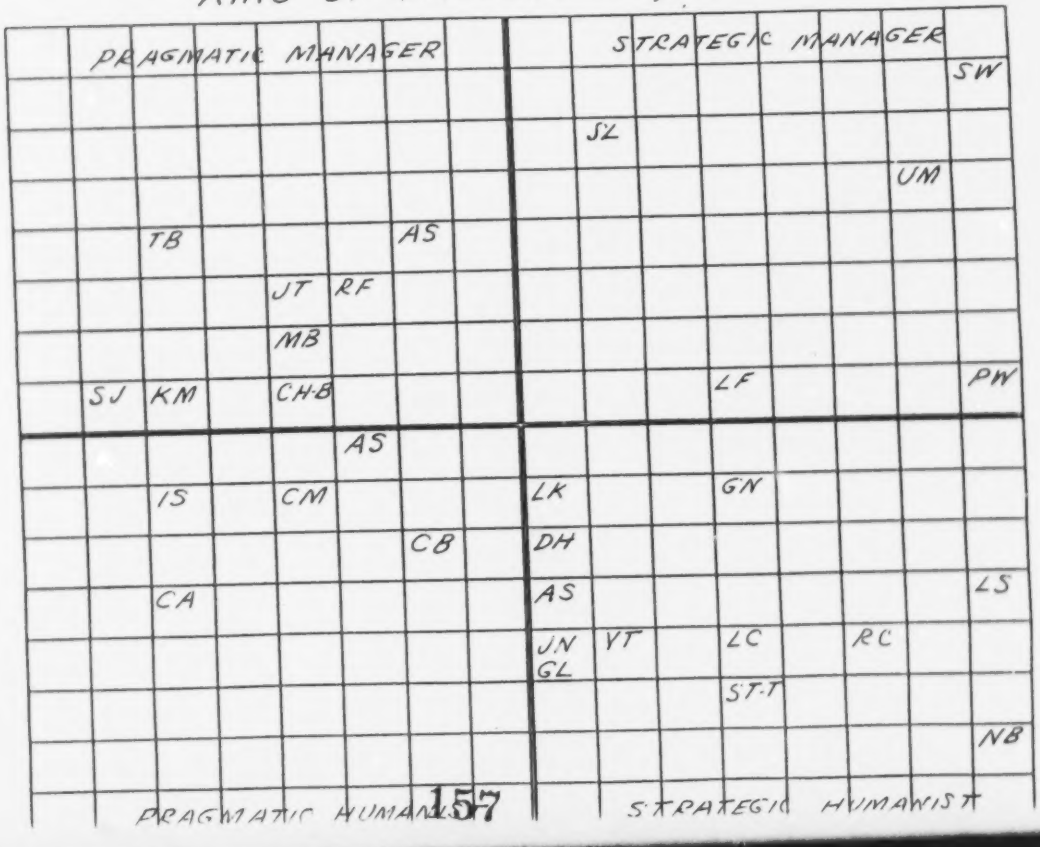
NATIONAL CLUSTER #50, FALL 1994



GREENVILLE, SC, CLUSTER 69, NOV 1994



KING OF PRUSSIA #72, FEB 1995



Developing a Home-Based Distance Education Engineering Program: Lessons Learned

John Sener, Project Director/Instructional Technologist, Extended Learning Institute,
Northern Virginia Community College

This presentation describes results of an Alfred P. Sloan Foundation-funded project to provide distance education mathematics, science and engineering courses to home-based students pursuing an associates degree in engineering. It highlights benefits and lessons learned from using Lotus Notes (TM) groupware and other media to develop asynchronous learning opportunities.

Developing a Home-Based Distance Education Engineering Program: Lessons Learned

John Sener
Northern Virginia Community College

Northern Virginia Community College (NOVA)'s Extended Learning Institute (ELI), with a grant from the Sloan Foundation, recently developed and piloted four mathematics, science and engineering courses for home-based students. Using ELI's self-paced, continuous enrollment delivery format, the courses utilized multiple media and technologies including Lotus Notes® groupware to develop asynchronous learning opportunities. Developing these courses involved a number of significant challenges such as laboratory activity development, faculty development, and maximizing student access. Over 140 students have enrolled in the courses, with student progress comparable to on-campus students and courses. Using Lotus Notes provided a number of benefits, but its administration, ease of use, and cost are drawbacks to its continued use in ELI's program. Based on its initial success, NOVA/ELI has secured funding to develop the remaining courses required to offer the Associates degree program in engineering to home-based learners.

In the spring semester of 1995, Northern Virginia Community College (NOVA)'s Extended Learning Institute (ELI) piloted four introductory courses required for the Associates degree in engineering. These courses were developed by ELI and engineering, science and mathematics faculty at NOVA's Annandale campus. Funded by a grant from the Alfred P. Sloan Foundation, this activity represented Phase 1 of a larger project to develop all of the courses needed to complete an Associates degree in engineering through home study.

Background

ELI, established in 1975 as the College's distance learning administrative unit, has enrolled over 130,000 students and currently offers 85 college credit courses in a wide variety of academic subjects. ELI has around 3,000 enrollments each semester (roughly 600 full time equivalent (FTE) students) and around 2,000 enrollments (425 FTEs) during the summer. Its mission is to increase student access to courses by implementing non-traditional programs and delivery systems, especially technology-based instruction, as student options for independent study or individualized learning.

Unlike many distance education programs, which utilize satellite broadcast of courses to on-site learners at remote locations, ELI's program is designed primarily to serve home-based learners. The typical ELI student is not geographically isolated, but suffers from gridlock: not just from the legendary Northern Virginia traffic, but also from gridlocked lives -- work, family, and other responsibilities deter them from attending scheduled classes on-campus. ELI students also tend to be older and have had some prior post-secondary education, so they are generally more capable of handling independent learning. To serve these students, ELI's program features ***self-pacing*** to give students substantial control over their pace of study, ***continuous enrollment*** to maximize access, and utilization of ***multiple media and technologies*** including print, video, computer, audiotapes, and voice mail.

Project Objectives and Challenges

Developing viable math, science and engineering courses, demonstrating that they can be offered effectively, and promoting student interaction and collaboration through the development of asynchronous learning opportunities were the principal project objectives. Promoting student interaction and collaboration is of particular interest to ELI, the Sloan Foundation, and the engineering profession. A recent survey of engineering employers indicates that while they are satisfied with the theoretical and scientific backgrounds of recent engineering graduates, they are not satisfied with graduates' communication or teamwork skills (Agogins, 1995). To meet this need, Sloan has funded a number of projects at colleges and universities to promote the development of asynchronous learning networks (ALNs) in math, science, and engineering courses. ALNs seek to eliminate the isolation of learners by providing them with access to any remote resource at the student's convenience, not dependent on synchronous, real-time communication. A resource can be a human (peers, tutors, faculty), a facility (e.g., libraries, laboratories at a distance), or a product (e.g., software-generated simulations, work products of remote collaborators). Assuming that learning follows from interaction, ALNs increase the opportunity for interaction among participants in the learning process (Mayadas, 1994).

Home-based learners at ELI generally learn in relative isolation; while they may have frequent contact with their instructor, they usually have minimal contact with other students in the course. Active encouragement of student interaction and collaboration is new to ELI; however, new technologies are making it increasingly possible for home-based learners to communicate, interact, and even collaborate with each other asynchronously. Besides developing asynchronous learning opportunities, attaining project objectives

involved tackling a number of significant challenges, among them:

Developing effective home study courses in math, science, and engineering. A highly significant question was whether ELI could even develop these courses, which pose special challenges such as developing science laboratories, delivering substantial graphical content, and representing scientific processes. Although ELI had previously developed several biology and mathematics courses, advanced mathematics (e.g., calculus), engineering and the physical sciences were new subject areas. Nationwide, there are fewer than 25 programs offering lower-division undergraduate engineering courses for credit to home-study students; lower-division chemistry and physics courses are even more rare (NUCEA, 1993; NUCEA, 1992).

Faculty development. To teach home study students through asynchronous, collaborative learning, faculty need general computer skills and competence with specific software and peripherals; specific distance education delivery skills and knowledge; and knowledge of collaborative learning activities and skills in designing them for asynchronous learning. Because these courses employ multiple media and technologies, faculty also needed to develop skills in a number of areas new to them, such as video production. As a result, faculty development has been a large, time-intensive process.

Selecting an effective delivery platform. Supporting student collaboration and electronic transfer of graphical content requires a reliable delivery platform. Lotus Notes® (hereafter referred to as Notes) was selected because of its many potential advantages for facilitating student collaboration while providing graphics transfer capabilities. Phase I of the project was designed to determine whether Notes was sufficiently reliable and beneficial to justify its long-term use.

Although it has received considerable publicity recently from being the principal target of IBM's acquisition of Lotus, Notes is still a relatively unknown product. Designed primarily for use by business organizations, Notes' multi-functionality makes it hard to define; it has been variously described as groupware, electronic mail, or a communications, database, document management, or workflow software product (Stahl, 1995). Its use in education has been primarily for administrative applications, although its use for instructional purposes is growing. Notes' potential in this area is still virtually unknown by community colleges; for example, only two two-year colleges are members of the Lotus Education Consortium (Lotus, 1995).

Maximizing student access. Pioneering the use of a complex software package such as Notes represented a bit of a departure for ELI. In keeping with its mission to increase access, ELI has relied primarily on relatively simple, proven, reliable technologies; for example, ELI's other currently used Bulletin Board System (BBS) software, First Term, is accessible by computers with 8088 microprocessors. Notes, by contrast, requires at minimum a 386 processor and Windows®, so it was necessary to determine whether Notes could be used without unduly restricting access.

Maintaining continuous enrollment. To provide maximum opportunity for students to schedule their classes, students can enroll in ELI courses at any time during the calendar year. With this enrollment pattern, students are in different places in a course at any one time and submit work at their own pace. However, continuous enrollment and self-pacing become highly problematic when attempting to create a collaborative environment, especially in developing student cohorts who can collaborate. An issue in Phase I was whether or not ELI would develop workable asynchronous learning opportunities while maintaining a continuous enrollment policy.

Portability to other community colleges. Courses were designed to enable other community colleges in Virginia, and perhaps beyond, to adopt them for offering to their students.

Phase 1 Results: Lessons Learned

Four courses were developed in Phase I: College Chemistry I (CHM 111), Calculus with Analytic Geometry I (MTH 173), Introduction to Engineering (EGR 120), and Engineering Graphics (EGR 115). Over 140 students have enrolled in these courses during the spring and summer semesters. Because of ELI's course enrollment policies, student progress results are incomplete since many students have not yet completed courses. Data collected thus far indicates that student progress thus far is comparable to that of their on-campus counterparts and to other ELI courses, indicating that our attempts to develop viable, effective courses were successful.

Course Development by Stages

Phase I of the project represented a first stage of course development; our experience and results confirmed that proceeding by stages was necessary. Course development in Phase I built upon ELI's prior success in print and video media for course delivery, so that these provided the foundation for the courses. Relying more on these media enabled us to succeed in attaining our more basic objectives while also testing the suitability of Lotus Notes for future course development.

Proceeding in stages has also made faculty development a more manageable task. Phase I allowed faculty to become competent in more basic areas such as course design and delivery, video production, and computer use, while becoming familiar with the possibilities of computer interaction and collaboration. Student use of Lotus Notes was required in the engineering courses but optional in the chemistry and math courses, enabling us to determine whether interaction by computer should be a required or optional activity. The

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results, which echoed ELI's prior experience with computer conferencing, suggested that computer interaction should be a required activity integrated into the courses. Placing less emphasis on computer interaction also allowed testing of Notes' capabilities without having to make a longer-term commitment to its use. Although using Notes for two semesters did not allow us to explore its instructional capabilities fully, it has provided valuable experience on the benefits and drawbacks of using Notes in our course delivery environment.

Benefits of Using Lotus Notes

Cross-platform compatibility. Our students were mostly Windows users, with a few Macintosh users; Notes also supports OS/2, NT, UNIX, and NetWare operating environments (Stahl, 1995).

Remote, asynchronous communication. Notes has both private (e-mail) and public (databases) communications capabilities. Discussion and database topics, or "threads", are easily organized within Notes' hierarchical structure. Notes also supports integrated text and graphics and has substantial word processing and styling capabilities with a visually appearing interface.

Customized applications development. Notes enables course materials to be accessed, transmitted, and revised electronically. Faculty were able to develop customized databases to provide help with homework problems, answers to questions about course material, and transfer of graphics files such as AutoCAD drawings. System administrators have substantial control over security and access levels, giving faculty more flexibility in organizing on-line course content.

Local, 'off-line' use. Notes' replication feature, which allows identical copies of a database document to be stored on multiple servers and retrieved by multiple users, also allows users to work 'off-line', vastly decreasing connect charges for long-distance users and reducing the need for local or 1-800 telephone lines at the server end.

Product of the future? With 1.5 million current users and a projected installed base of 9-12 million users within the next 3 years (Stahl, 1995), using Notes may itself be a benefit for students, preparing them for using it or a comparable product in their future workplace environment.

Difficulties with Lotus Notes

Complexity and high support requirements. Notes is powerful but complex to use. Many of our students, for instance, reported that Notes' replication feature was confusing to use. Notes' massive Help database containing over 900 documents is thorough and informative but also easy for novice users to get lost in. We created a simplified help database for our students, but even this database proved problematic to use.

Notes' complexity meant a steep learning curve for our students, who frequently encountered problems when installing, navigating, or trying to replicate. Installation difficulties included modem incompatibilities, share files, user id's, and replication failures; even when installation was successful, it was relatively time-consuming, particularly for students with 386 computers. Students also had difficulties with composing and posting messages to databases, despite the help databases available. Consequently, students required substantial user support.

Logistics. We distributed a 'stripped-down' version of Notes which required 8 3.5" floppy disks for Windows users; the full Macintosh version of Notes fills 29 3.5" disks. Making subsidized copies of Notes available to home-based learners required considerable time and labor, involving copying and mailing disks to students; recovering disks upon course completion; replacing defective disks; checking returned disks for viruses; and making new copies when necessary before redistribution.

Cost. Since NOVA is not authorized to raise course fees to cover additional course costs, long-term use of Notes would require either a college subsidy or student purchase. Although Notes' already heavily discounted educational volume purchase price has dropped by two-thirds since the project began, ELI cannot afford to distribute subsidized copies of Notes to students even at the current price of $45, apart from the substantial hidden costs associated with disk duplication, distribution, and recovery. Many of our community college students would probably not pay this amount either.

Instructional shortcomings. Notes does not handle equations and formulas easily; we found that importing them as graphics was easier than trying to use Notes' word processing capabilities for this purpose. Also, while transfer of graphics *products* (e.g., AutoCAD drawings, charts) is possible with Notes (although painfully slow with lower speed modems and large files), course development and piloting demonstrated the need to be able to show *processes* -- how to create a drawing or how to arrive at the correct formula or equation. Animation software for demonstrating process is too expensive to subsidize or require purchase, and most home-based learners don't have the requisite platform.

Computer lab use. To increase access for ELI students, a total of nine computers were installed in computer labs on the five NOVA campuses and dedicated to Notes users. However, each Notes user must install a personal copy on each workstation s/he uses, and a personal copy of Notes must be installed for each user of a particular workstation. Consequently, Notes is difficult to support in a campus lab environment since students must always use the same computer or install on multiple computers, which consumes time and hard disk space.

Recommendations for Using Lotus Notes

Although our experience with Notes is far from definitive and our program needs are unique, these recommendations are offered for institutions contemplating comparable programs:

Use network access. Although Notes supports both network access and remote dial-up via telephone lines, it is designed primarily for network use. Think twice about using Notes with remote dial-up access, as the logistical and cost factors are daunting. If dial-up access must be used, make sure there is adequate system administration and user support.

Provide up-front training and documentation. Our students were provided with print instructions for installing Notes, under the assumption that the available on-line help for using Notes would be sufficient. However, they expressed a strong preference for having print documentation for using Notes as well.

Provide adequate support. Have at least a part-time person available for system administration and user support; increase support staff size as necessary, depending on the number of learners served.

Consider your subject matter and student population. Lotus Educational Consortium members are concentrated in professional disciplines such as business, management, and computer & information sciences (Lotus, 1995). Students in these subjects tend to be more highly educated, computer proficient, and likely to be exposed to Notes in their work environment. Consider whether your students would have the time, incentive, and other resources required to use Notes.

Planned Phase 2 Activities

NOVA and ELI have recently received Sloan Foundation funding to develop the remaining courses required for the Associates degree program in engineering; the complete program will be available starting in the spring of 1997. When completed, this will be ELI's third associates degree program, joining currently available programs in general studies and business administration. Based on our Phase 1 results, several significant changes will be made.

Use of FirstClass & Internet access to replace Lotus Notes. Five main issues affected the decision not to continue using Lotus Notes: (1) its technical capabilities and usefulness for instructional purposes, (2) administrative support requirements, (3) faculty and student learning curve, (4) purchase and operational costs, and (5) its interface capabilities for communication via Internet with Virginia community colleges and other higher education institutions.

Lotus Notes will be replaced with FirstClass (with Internet access eventually), which appears to present better solutions to these problems. FirstClass is a multi-platform, electronic communication software package that supports e-mail, workgroup conferencing, and remote access, including Internet. Although Lotus Notes is a more powerful package, FirstClass will be easier and less expensive to use and administer, and equal to Notes as an instructional platform for our purposes.

Increased emphasis on ALN development -- All courses will include a required computer interaction/collaboration component integrated into the course. The use of video will be de-emphasized in most courses, particularly for course content delivery, as faculty rely more on computer interaction and collaboration. Despite requiring computer interaction, ELI is confident that student access to courses can be maintained while producing viable, effective courses that eliminate the isolation of its home-study students, enhancing their learning experience in the process.

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About the Author

John Sener is Project Director and lead Instructional Technologist for the Sloan project at Northern Virginia Community College (Ph#: (703)323-3712; e-mail: nvsenej@nvmusic.vccs.edu). Mr. Sener is responsible for directing course and technology development, coordinating project evaluation, marketing and publicity, budget supervision, and dissemination of project results. Mr. Sener has had an eclectic career in education and training over the past eighteen years; besides directing a number of foundation and federally funded projects, he has also been a trainer, teacher, administrator, instructional designer, and tutor in the areas of adult literacy, basic skills, information systems, and English as a Second Language. He holds a M.S. degree in Education from Johns Hopkins University and a B.A. in Psychology from Oberlin College.

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CHILD & YOUTH STUDIES
SPECIALIZATIONS

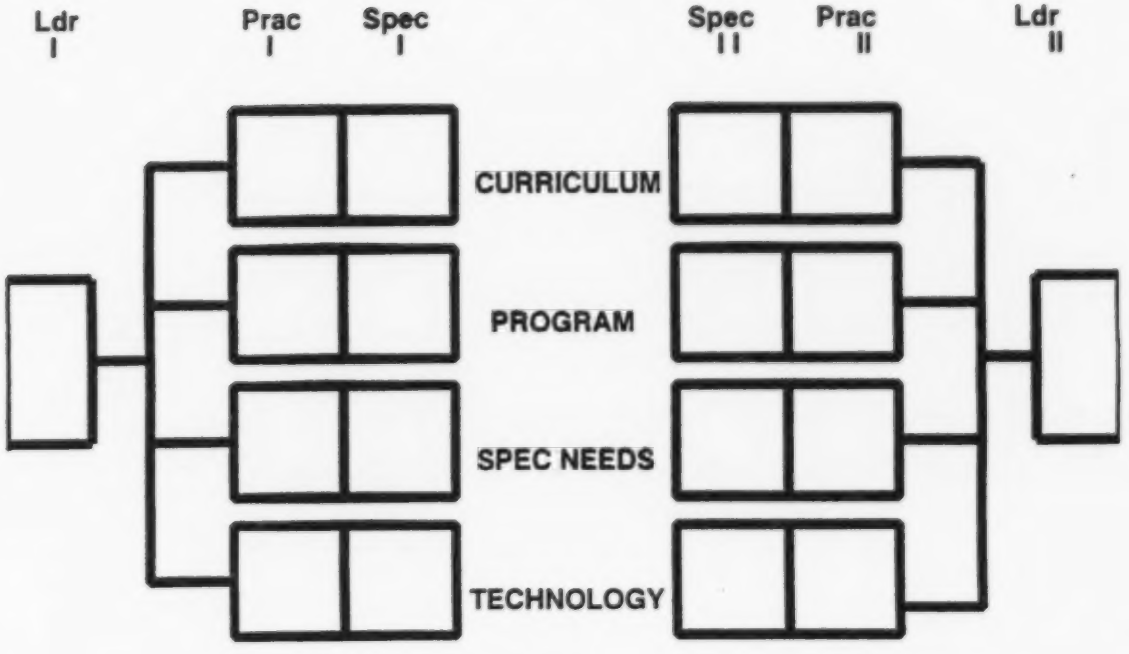
CURRICULUM DEVELOPMENT AND
SYSTEMIC CHANGE

MANAGEMENT OF PROGRAMS
FOR CHILDREN & YOUTH

SPECIAL SERVICES FOR
CHILDREN & YOUTH

APPLICATION OF TECHNOLOGY
TO EDUCATION & TRAINING

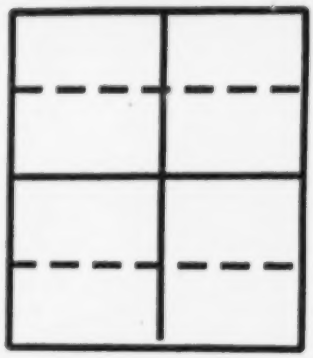
CYS PROGRAM



LEADERSHIP II

START MULTI-MEDIA COMMENCE

ELECTRONIC CLASSROOMS
NOTES
ELECTRONIC LIBRARY
INTERNET
AUDIOTAPE
VIDEOTAPES



ANALYSIS, SYNTHESIS, & TRANSFORMATION

VISION CREATION & CO-CREATION

ACTION PLAN CREATION & CO-CREATION

PRESENTATION OF VISIONS & ACTION PLANS

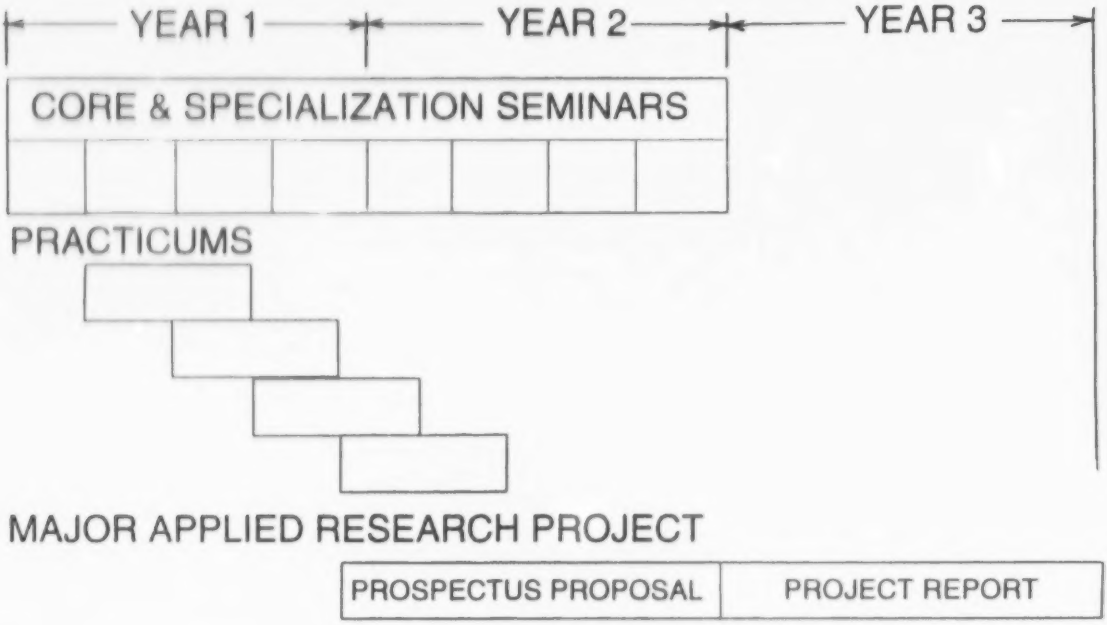
TRANSFORMATIONAL LEADERSHIP

LEADERSHIP I **LEADERSHIP II**

AWARENESS & UNDERSTANDING

COMMITMENT & DEDICATION

A. PATTERN OF DEGREE COMPLETION
(TRADITIONAL FORMAT)



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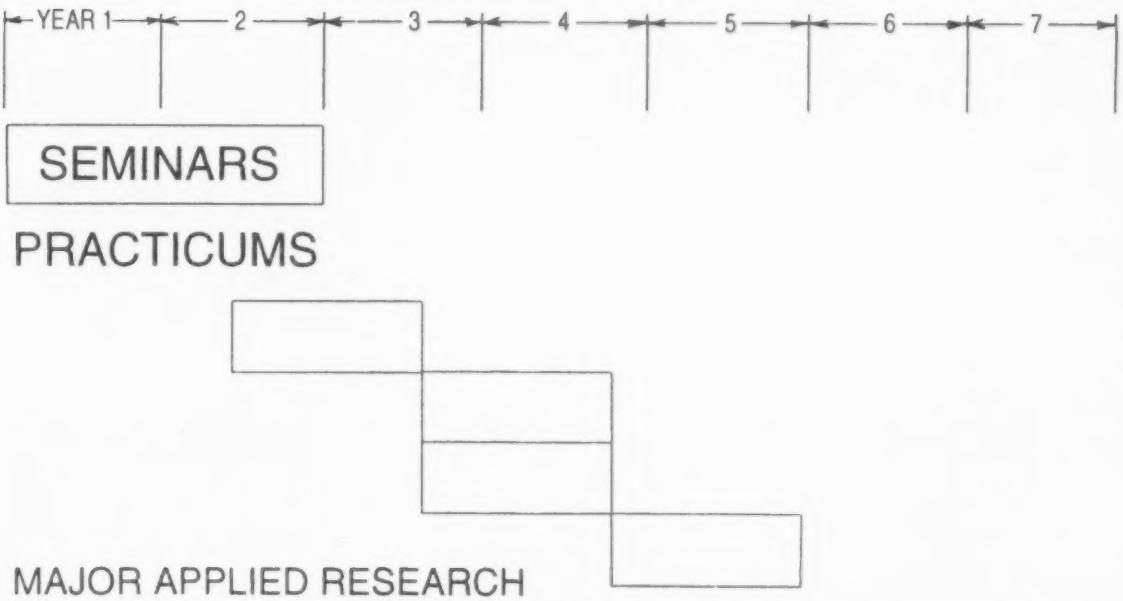
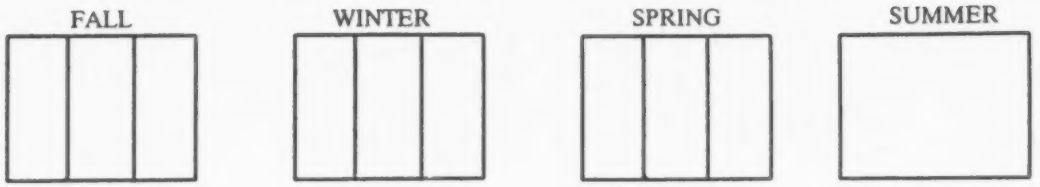
(TRADITIONAL FORMAT)

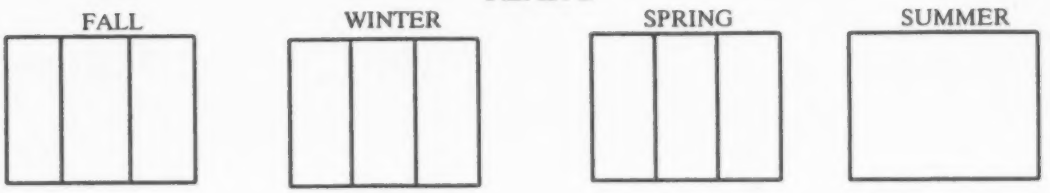


SEMINARS
TRADITIONAL FORMAT

YEAR 1

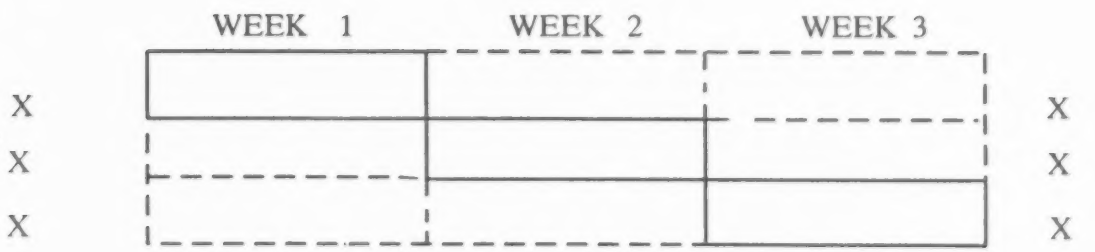


YEAR 2

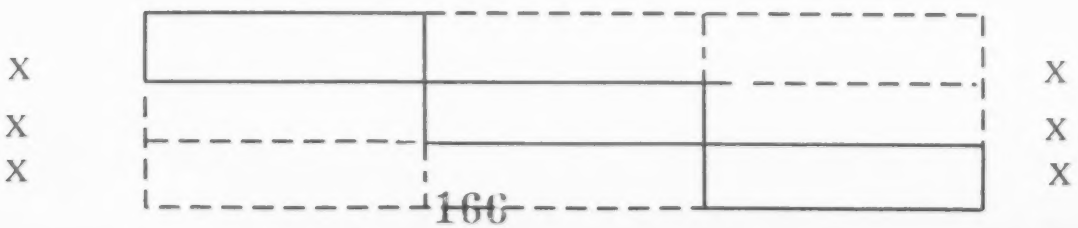


SEMINARS
INTERNATIONAL FORMAT

PRE SUMMER YEAR 1 POST



SUMMER YEAR 2



HRD & TECHNOLOGY INTENSIVE MAJOR APPLIED RESEARCH PROJECTS

"A Multi-Year Plan for the Utilization of Multimedia Technology at Northern Maine Technical College." Terrence H. Overlock, Sr. (Writing Final Report)

"An Open Learning Center: A Model for the College of Arts, Science, and Technology" (Jamaica). Kenred Allen Christian

"Development and Validation of a Plan for Implementing Faculty Educational Technology Resource Services at Embry-Riddle Aeronautical University." Shirley Waterhouse

"Development, Implementation, and Evaluation of a Model Distance Learning Curriculum in Spanish to Prepare Hispanic Migrant Farmworkers for the General Educational Development Tests." Oscar Vazquez-Melendez

"A Multimedia Modem Course Development Project for Del Mar College." Phillip L. Davis

"The Development of an Interactive Multimedia Developers Procedures Manual for Use by Instructional Systems Designers." Richard P. Smith

"The Development of a Distance Learning Course for the Computer Science/Computer Information System Curriculum Using Multimedia Presentations." Althea Stevens

"Development of a Strategic Plan for Integration of Instructional Technology at Victoria College." Karen E. Hoolit

"The Development of a Strategic Plan to Provide a Multisite Electronic Engineering Technology Program at the Community College of Allegheny County." Pearley Cunningham

"Creating a Strategic Faculty Development Paradigm to Assist Faculty Members in Mastering the New Communications Technologies at Mercer County Community College." Robert D. Bolge

"Development of a Plan to Offer Selected Computer Courses via Distance Learning in the Data Processing Degree Programs at Seminole Community College." K. Kay Delk

"Development of a Strategic and Operational Plan for Integration of an Integrated Information System Into Instruction at Carroll Technical Institute." Shirley Gantt

"Development of a Strategic Plan to Offer an Accredited Doctoral Program for Professional Federal Employees at Brooks Air Force Base." Virginia D. Moody

richsmit@alpha.acast.nova.edu RICHARD SMITH NOV 1995

Conceptual Framework

Research Question	Chapter 2 Literature Review	Chapter 3 Methods and Procedures	Chapter 4 Results	Chapter 5 Discuss Conclusions etc
1. What constitutes an appropriate organizational format for use in the manual in order to effectively step developers through each phase of development?	Locate Models, Review Design Texts Identify Styles used by others. Style Manuals Development Guides/Kits	Step 1 Review the literature relative to each research question. Analyze and synthesize the data Step 2 Contact ISD organizations, attempt to obtain design documents in use. Analyze and synthesize the data Step 3 Conduct interviews with ISD designers. Use internet as possible on-line source of developers and designers. Analyze and synthesize the data Step 4 Select ISD model to emulate, and formulate an initial design layout for manual based upon the synthesis of data in first three steps. Assemble content. Contruct evaluation timeline Step 5 Circulate design to formative review committee for comment, incorporate comments as appropriate Step 6 Develop draft document Circulate individual chapters to Formative committee for comment,incorporate comments as appropriate Step 7 Assemble and distribute draft for review by summative panel Respond to copmments. Incorporate comments as appropriate Step 8 Present finished copy of report to LRMC	Description of Oganizational Layout Description of Organizational scan Report summative evaluation results	Literature consensus Org. Consensus
2. Which instructional systems design model lends itself most effectively to the development of interactive multimedia materials?	ISD Models: ADDIS Dick and Carey ARCS 4-D (define, Design, Develop, Dissem) Component Display Theory		The model - rationale for selection Possible use of figures and tables to graphically depict models and results of summative evalaution.	Refer to Gagne'
3. What skills and competencies are required of developers of interactive multimedia materials?	IMM development. Staff Training requirements. Project management		Summarize skill requiremnts	Possible table summarizing skills
4. What constitutes an appropriate plan for the evaluation of materials subsequently developed using the procedures manual?	Evaluation of CBT Model Procedures Plan of action		A description of the evalaution plan. Gannt chart	

HUMAN RESOURCES DEVELOPMENT - MULTI-TECH

ORIENTATION	1ST MONTH	2ND MONTH	3RD MONTH
NOVA UNIVERSITY PROGRAM FOR HIGHER EDUCATION HUMAN RESOURCES DEVELOPMENT 1. ANALYSIS (AUDIT) 2. VISION 3. ACTION PLAN DIAGNOSTIC TESTS 1. PEOPLE 2. ESTABLISHMENTS LUNCH MULTI-TECHNOLOGY SEQUENCE OF LEARNING ACTIVITIES	ANALYSIS VIDEOTAPE (WORKSITE AUDIT) Ecr #1 1. AUDIT REVIEW 2. FOUR PROJECTS VISION VIDEOTAPE (CONCEPTUAL FRAMEWORK FOR ONE PROJECT) Ecr #2 VISION-CREATION AND CO-CREATION	ACTION PLAN VIDEOTAPE Ecr #3 1. RATIONAL 2. GOALS: OBJECTIVES RESOURCES AUDIOTAPE 1. FOUNDATIONS 2. FEDERAL GOVT. Ecr #4 1. METHODOLOGY 2. EVALUATION 3. BUDGET	VIDEOTAPE ON ORAL PRESENTATION Ecr #5 1. ISSUES 2. FINAL EXAMINATION PRACTICUM VIDIOTAPE 1. RESEARCH QUESTIONS 2. METHODOLOGY Ecr #6 SYNTHESIS AND EVALUATION
OUTCOME: A PROFESSIONAL DEVELOPMENT PLAN			

MULTI-TECH MENU

ANALYSIS	VISION & VISIONING		ACTION PLAN
Mission Review	Mind &	Systems	Readiness
Philosophy	Cognitive Dev.	Strategic Planning	a. Preschool
Vision	Social Dev.	Outcomes Based Ed.	b. Parents
Policies	Physical Dev.	Needs Assessment	c. Health
Functions	Moral Dev.	Program Review	Math, Sci., Tech
Know how	Learning Styles	Total Quality	a. Math
Technology	Planning	Tech. Prep.	b. Science
	Preferences	150 9000	c. Technology
Budget	Neurolinquistic	Site Based Mg.	- Bio-related
	Programming	Org. Dev.	- Communication
		Databases	- Construction
		Networks	- Engineering
			- Manufacturing
			- Transportation

HUMAN RESOURCES DEVELOPMENT

SPECIALIZATIONS COMPETENCIES

	CONCEPTUAL	INTERACTIVE	TECHNICAL
ADULT EDUCATION			
COMPUTING AND INFORMATION TECHNOLOGY			
HEALTH CARE EDUCATION			
HIGHER EDUCATION			
VOCATIONAL, TECHNICAL, AND OCCUPATIONAL ED.			

COMPETENCIES AND SKILLS
COMPUTING AND INFORMATION TECHNOLOGY

CONCENTRATION		
LEARNING: HUMAN RESOURCES DEVELOPMENT	CURRICULUM DEV & INSTRUCTIONAL SUPPORT	ADMINISTRATIVE SUPPORT FUNCTIONS
GENERIC		

TECHNOLOGICAL LITERACY THROUGH A COLLABORATIVE, ONLINE, AND SERVICE LEARNING STRATEGY

RETHINKING FOR RESTRUCTURING AND REVITALIZING
NEW HABITS OF MIND AND HEART

HIGHWAY CONSTRUCTION 101	*NET REPAIR 102*	*GLOBAL MESSAGES 103*
Advances in Research and Development	*Internet Networks*	*Learning Communities of the Future*
Impact of Science and Technology	*NSFNET Supercomputers*	*Cultural Diversity: People and Societies*
Implications for Human Resources Development	*Online and Satellite Systems*	*Electronic Publishing and "Systems"*

TRENDS IN ORGANIZATIONAL DEVELOPMENT

Variables in Organizations

Leadership Competencies	Mission	Program	People	Technology
Analysis	Mission +++ Vision: Content & Process	From Free Standing to Connected	From A Cost To The Valued Asset	Anticipate Impact on Workplace and Workforce
Visioning	Vision & Scenario Creation and CO-CREATION	From Input & Process to OUTCOMES	Empowered Self-Directed Work TEAMS	Education & Training: Any Topic Anywhere JUST-IN-TIME
Action Plan	Continuous Improvement toward World Class BENCHMARK STANDARDS	Client Satisfaction: Output of Service & IMPACT ON CONSUMER	People Sciences Beyond Traditional COGNITIVE SYNAPSES	Databases Networks Electronic Systems CYBERSPACE SOLUTIONS

Bottom Line: "Learning to Learn" Human Resources Development

TRANSFORMATIONAL LEADER

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